



U.S. Army Environmental Center
Environmental Technology Division
Edgewood Area
Aberdeen Proving Ground, Maryland

EVALUATION OF A TRANSPORTABLE HOT-GAS DECONTAMINATION SYSTEM FOR THE DECONTAMINATION OF EXPLOSIVES - CONTAMINATED DEBRIS & PIPING

DISTRIBUTION STATEMENT A

Approved for public release;
Distribution Unlimited

Operations & Maintenance Manual

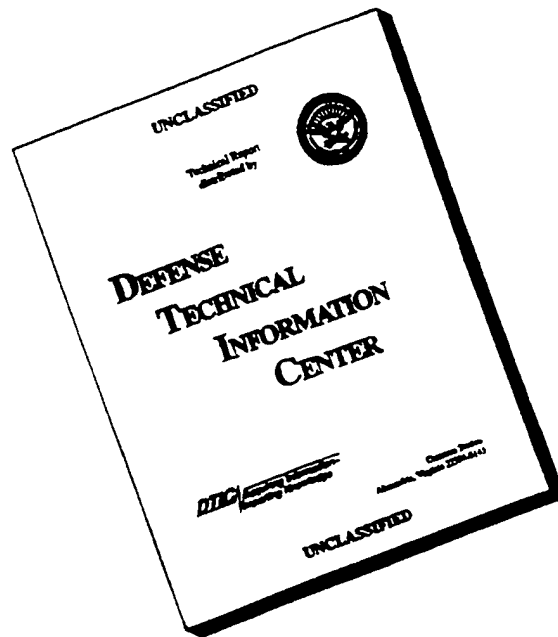
AS-BUILT DRAWINGS

VOLUME II

19961017 124

WESTON
MANAGERS DESIGNERS/CONSULTANTS 96P-2943

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FURNACE EQUIPMENT

<u>DRAWING NO.:</u>	<u>REV. NO.:</u>	<u>DRAWING DATE</u>	<u>DRAWING DESCRIPTION</u>
F928-01 (Sheet 1)	B	8/1/96	WIRING DIAGRAM: M
F298-01 (Sheet 2)	B	8/1/96	WIRING DIAGRAM: M
F298-01 (Sheet 3)	B	8/1/96	WIRING DIAGRAM: M
F298-01 (Sheet 4)	B	8/1/96	WIRING DIAGRAM: M
F298-02 (Sheet 1)	B	8/1/96	MODEL FBG5610: GE
F298-02 (Sheet 2)	B	8/1/96	MODEL FBG5610: GE
F298-03	B	8/1/96	COMBUSTION SCHEM
1300-01	-	12/27/95	INTERCONNECT DUCT
1300-02	-	1/1/96	EXHAUST PLENUM AS
1300-03	-	1/8/96	EXHAUST PLENUM DE

①

FURNACE EQUIPMENT

EQUIPMENT

DRAWING DESCRIPTION

WIRING DIAGRAM: MODEL FBG5610 GAS FIRED FURNACE
WIRING DIAGRAM: MODEL FBG5610 GAS FIRED FURNACE
WIRING DIAGRAM: MODEL FBG5610 GAS FIRED FURNACE
WIRING DIAGRAM: MODEL FBG5610 GAS FIRED FURNACE

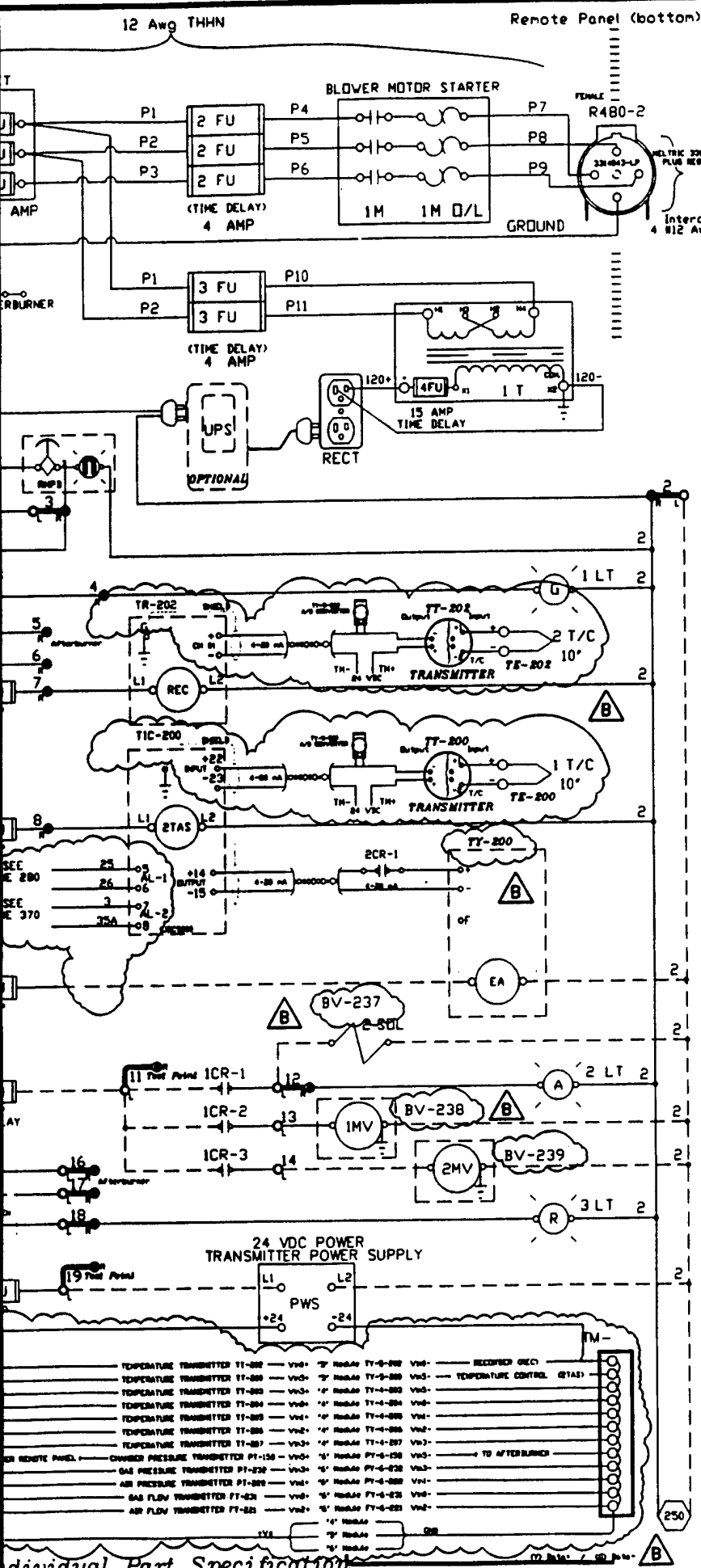
MODEL FBG5610: GENERAL DIMENSION & ASSEMBLY
MODEL FBG5610: GENERAL DIMENSION & ASSEMBLY

COMBUSTION SCHEMATIC

INTERCONNECT DUCT
EXHAUST PLENUM ASSEMBLY
EXHAUST PLENUM DETAILS

2

Refer to Master Parts List 350 Series Numbers for individual Part Specifications



CONTROL POWER

UNINTERRUPTABLE POWER SUPPLY

REMOTE ON/OFF

LOCAL ON/OFF (290)

COMBUSTION BLOWER ON

COMBUSTION BLOWER ON

Contact to Afterburner Remote Panel

Drug ES120-2 Line 105

RECORDER THERMOCOUPLE

RECORDER

CONTROL THERMOCOUPLE

TEMPERATURE CONTROL

CONTROL SIGNAL

COMBUSTION GAS BUTTERFLY ACTUATOR

BLEED VALVE

FLAME ON PILOT LIGHT

ELECTRO-HYDRAULIC VALVES

DOOR CLOSED

Contact to Afterburner Remote Panel

DOOR OPEN LIGHT

24 VDC POWER SUPPLY

DATA ACQUISITION LOOPS

RS485 LINK(S) TO DATALOGGER

FOR DATE

AP

IT

REV

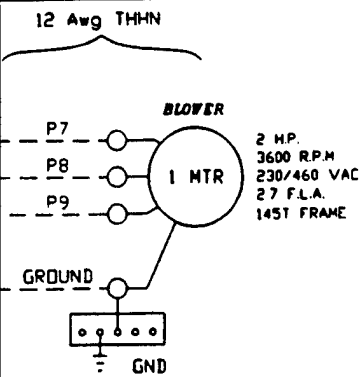
Mo

DATE 5

OK

JOB NO. W

FILE NAME



POWER SUPPLY

ER ON
 ER ON
 er Remote Panel
 105
 COUPLE

UPLE

ROL

DR

IGHT

C VALVES

er Remote Panel

PPLY

DDPS

DATALOGGER

CERTIFIED FOR CONSTRUCTION

FOR JOB # WES-FBG5610-1 (1294LL)
 DATE : 9/28/94 BY : S.N.L.
 APPROVED BY : COLLEEN A. PARKER (CUSTOMER)
 DATE : 8/1/96

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REV#	DATE	REVISION DESCRIPTION

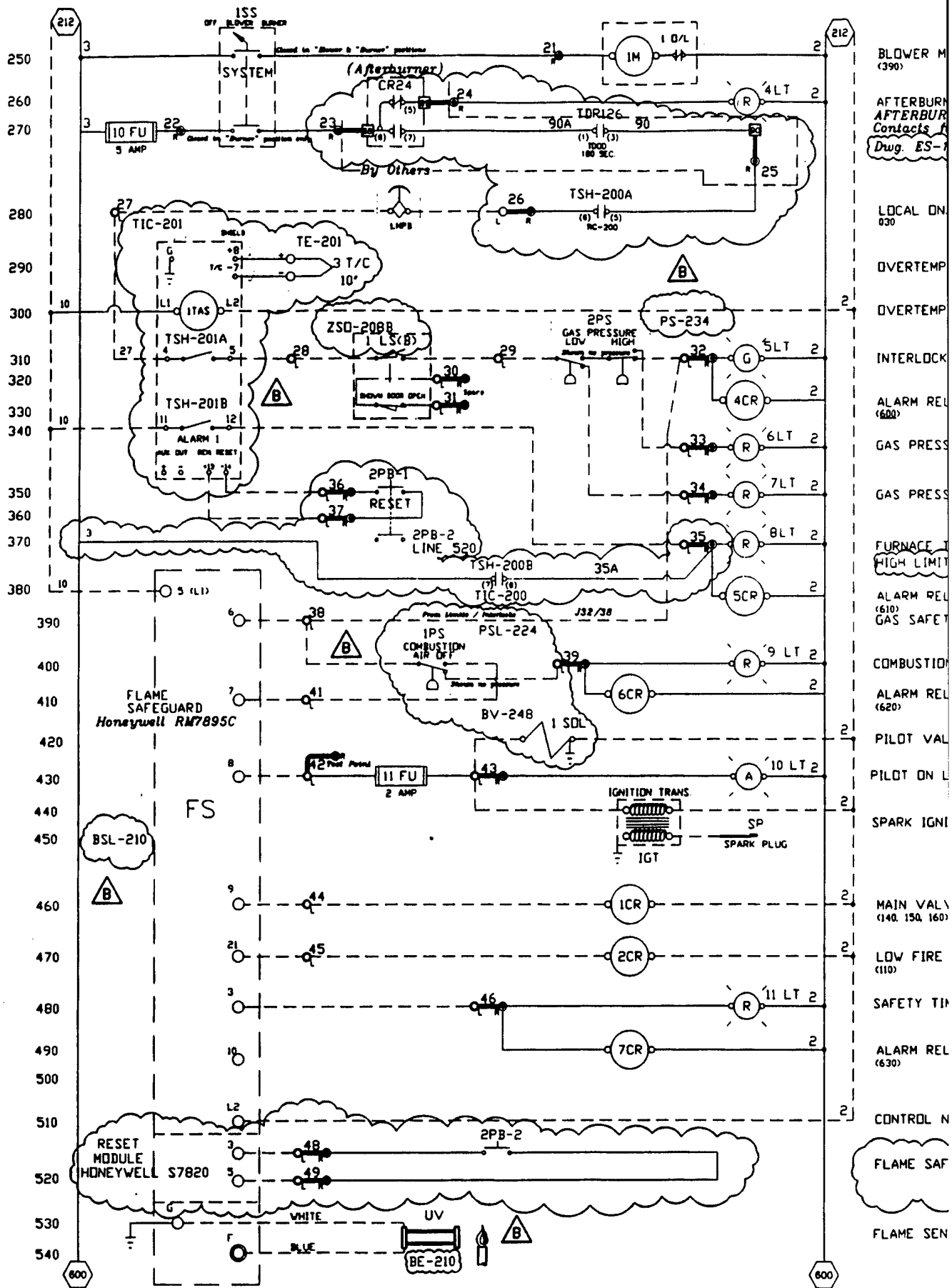


L & L SPECIAL FURNACE CO., INC.
 20 KENT RD. P.O. BOX 2129 ASTON, PA. 19014

WIRING DIAGRAM
 Model FBG5610 Gas Fired Furnace

DRAWN BY	S.N.L.	REV. CODE	DRAWING NO.
DATE	5/25/95	SCALE	.125
CHK	APP	B	F928-01
JOB NO.	WES-FBG5610	SER NO.	1294LL
FILE NAME	FA 01 WES-FBG5610-01.DWG	MADE FROM	F878-01 (Hamilton Standard)
			SHEET NO. 1 of 4

3



Refer to Master Parts List 350 Series Numbers for individual Part Specification

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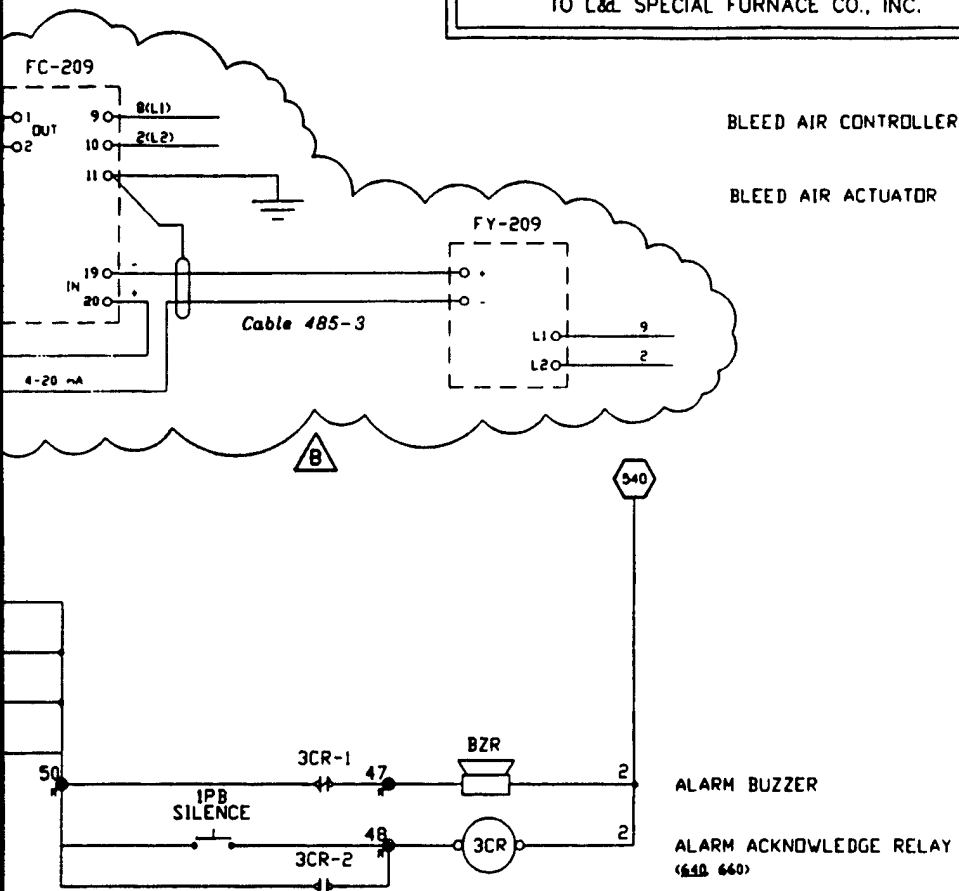
FOR JOB # WES-FBG5610-1 (1294LL)


DATE : 9/28/94 BY : S.N.L.

APPROVED BY : COLLEEN A. PARKER

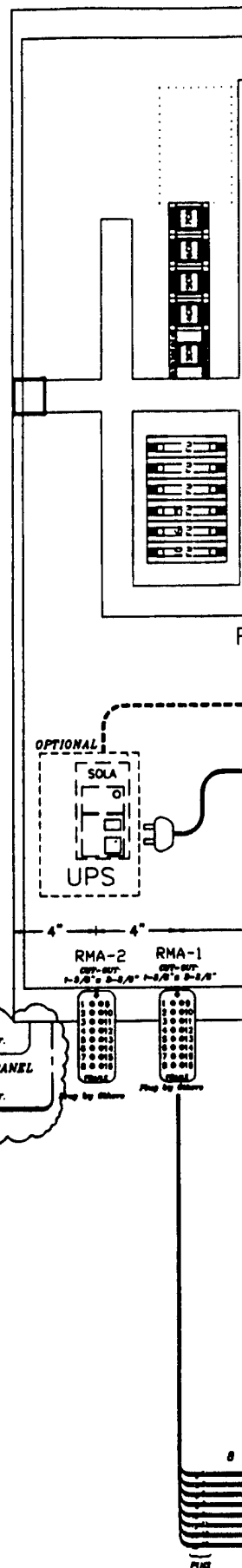
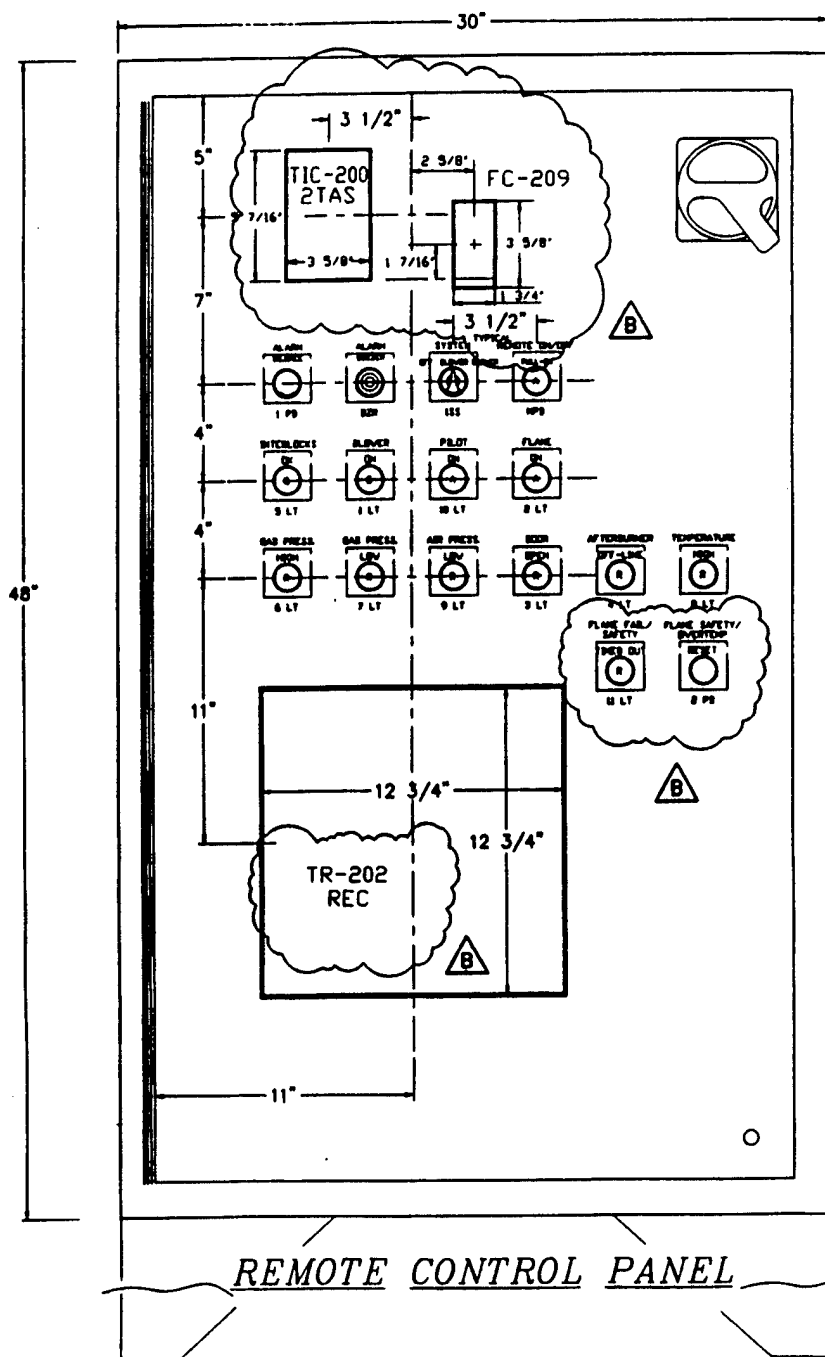
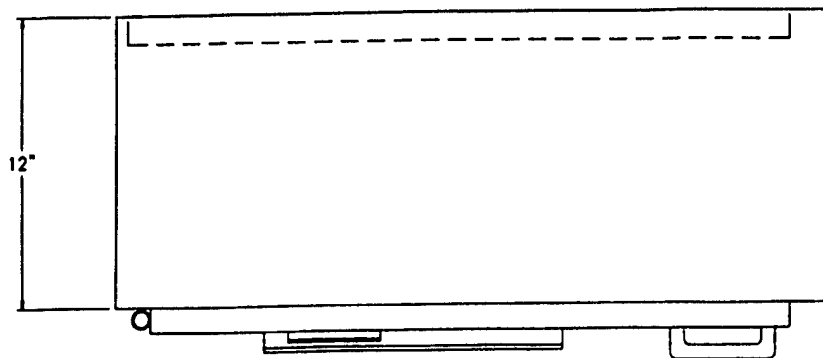
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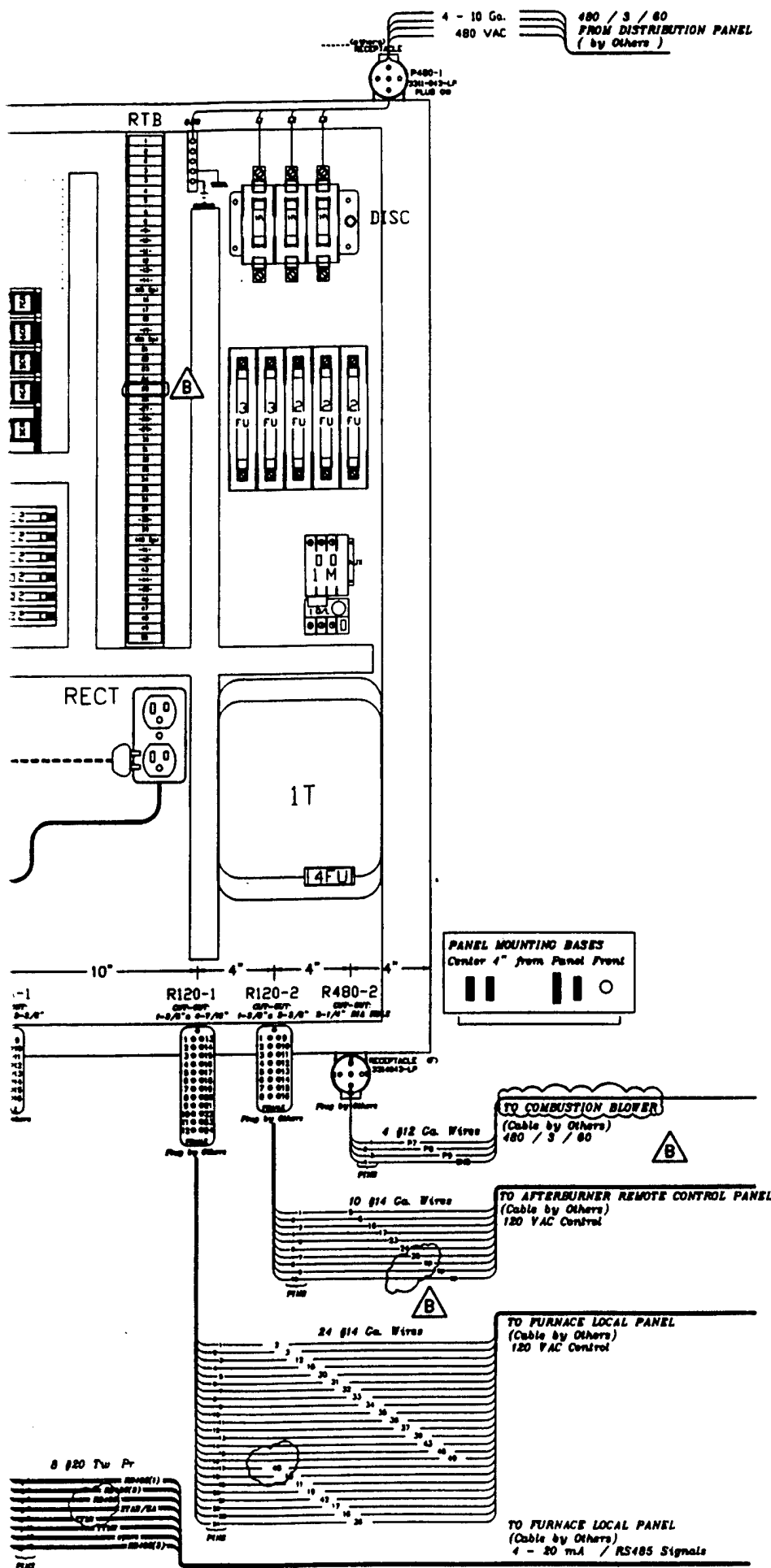
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WIRING DIAGRAM Model FBG5610 Gas Fired Furnace		
DRAWN BY	S.N.L.	REV. CODE
DATE	5/25/95	SCALE .125
CHK		APP
JOB NO.	WES-FBG5610	SER NO. 1294LL
FILE NAME	F&L WES-FBG5610-01.DWG	
	MADE FROM	F878-01 (Hamilton Standards)
DRAWING NO.		B F928-01
SHEET NO.		2 of 4

3



Refer to Master Parts List 350 Series Numbers for individual Part Specification

7



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DATE : 9/28/94 BY : S.N.L.

APPROVED BY : COLLEEN A. PARKER

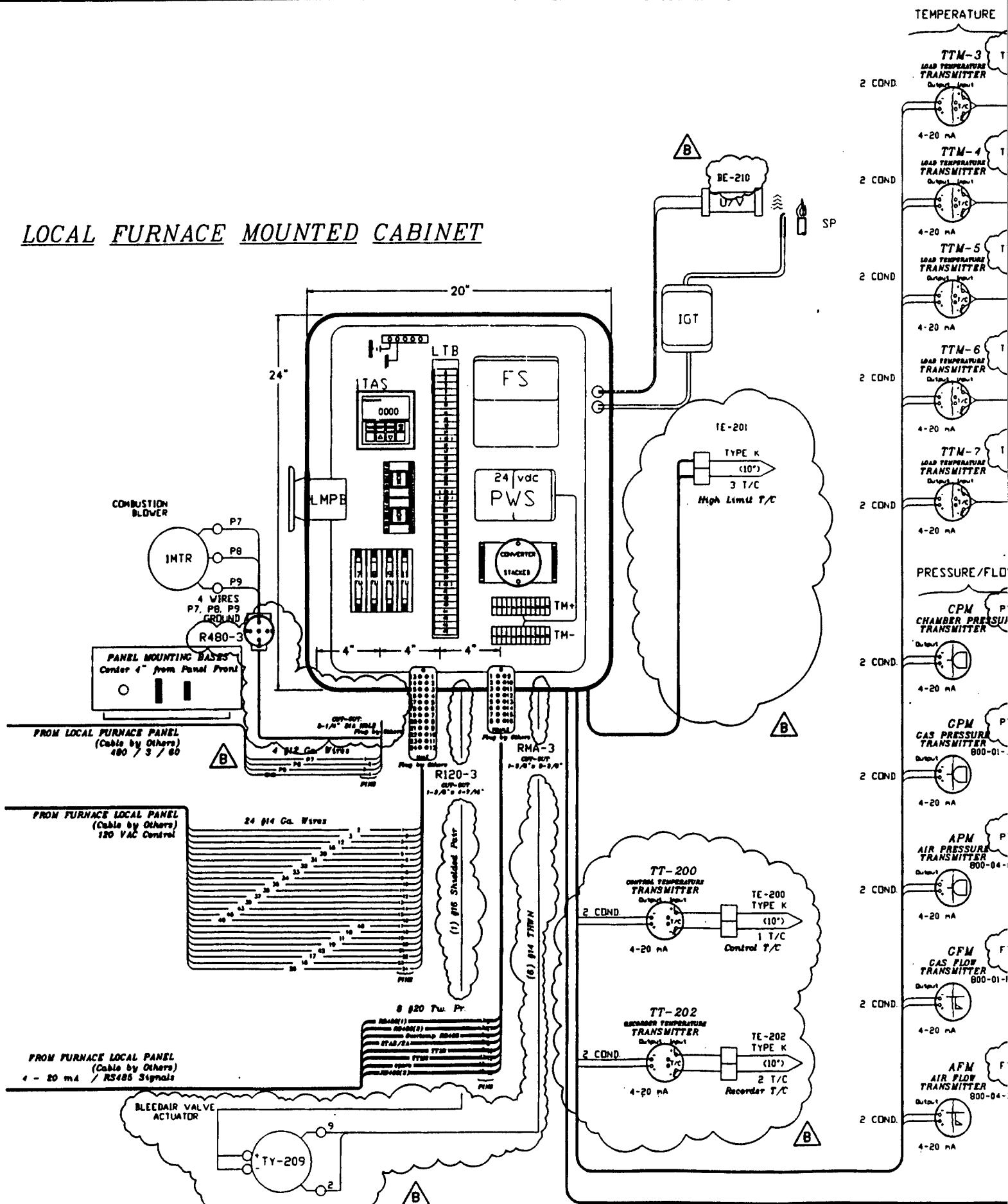
DATE : 8/1/96 (CUSTOMER)

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B	B/1/96	FIELD MODIFICATIONS
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REV#	DATE	REVISION DESCRIPTION
 L & L SPECIAL FURNACE CO., INC. 20 KENT RD. P.O. BOX 2129 ASTON, PA. 19014		
WIRING DIAGRAM Model FBG5610 Gas Fired Furnace		
DRAWN BY	<u>S.N.L.</u>	REV. CODE
DATE	<u>5/25/95</u>	SCALE <u>.25</u>
CHK		APP
JOB NO	<u>WES-FBG5610</u>	SER NO <u>1294LL</u>
FILE NAME	<u>WES-FBG5610-01.DWG</u>	MADE FROM <u>F878-01 (Hamilton Standard)</u>
		DRAWING NO <u>B F928-01</u>
		SHEET NO <u>3 of 4</u>

(2)

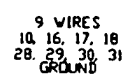
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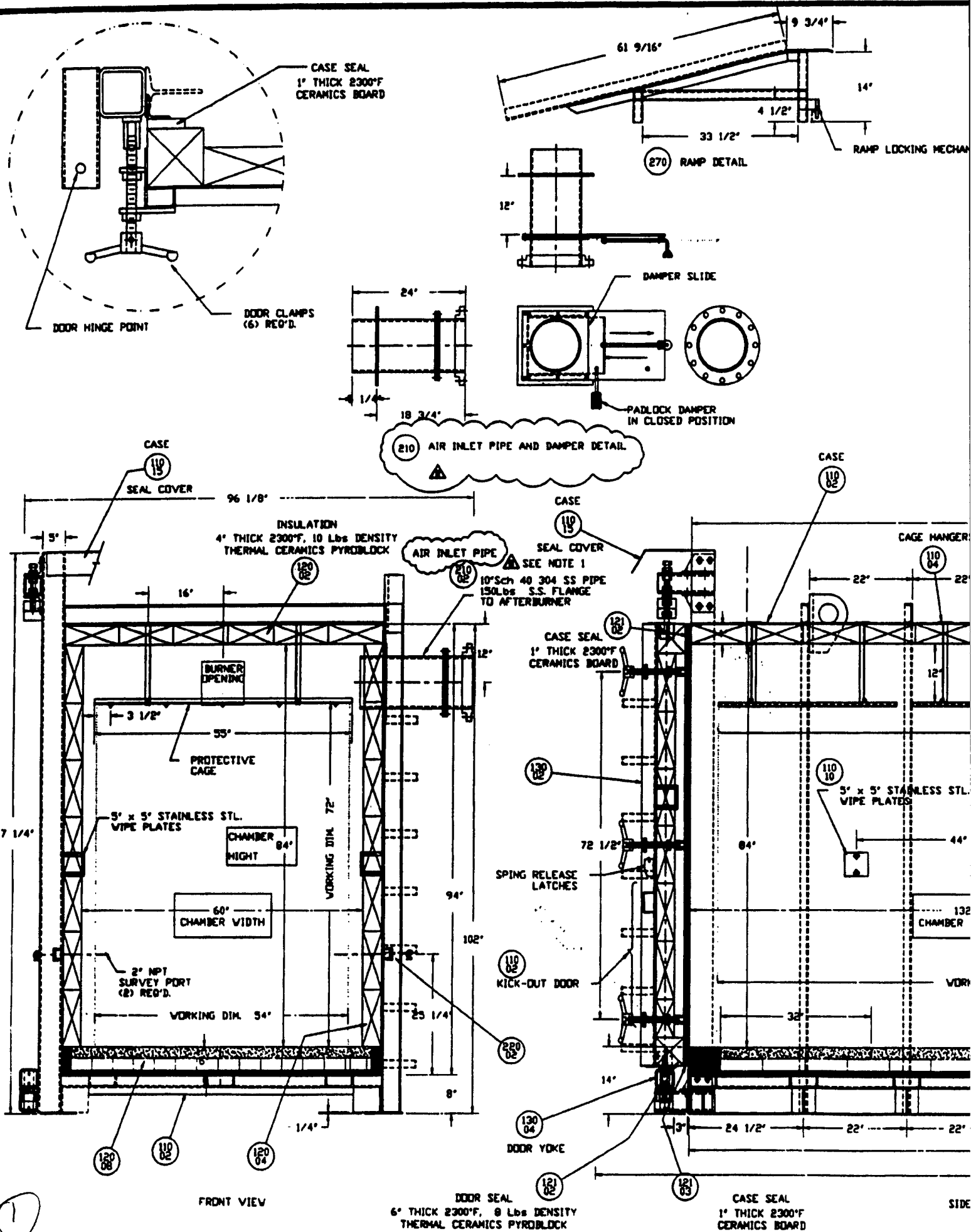
Refer to Master Parts List 350 Series Numbers for individual Part Specification

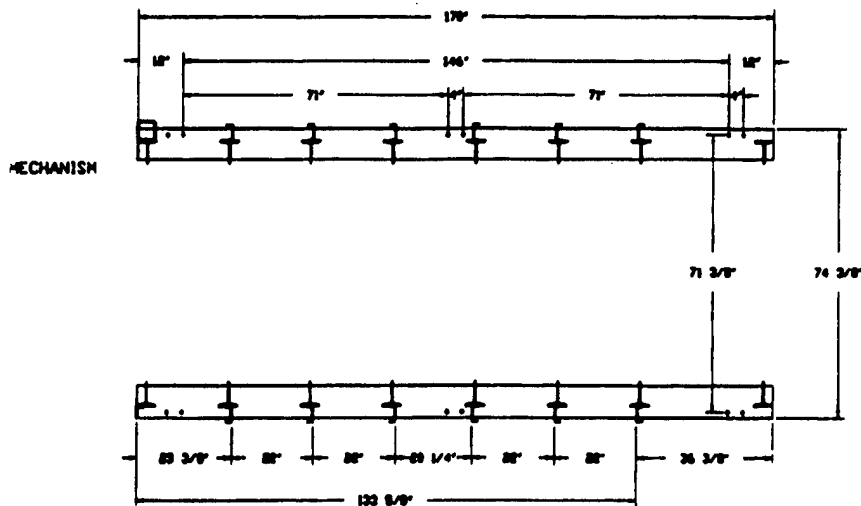
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FM
LOW
PITER
800-84-D

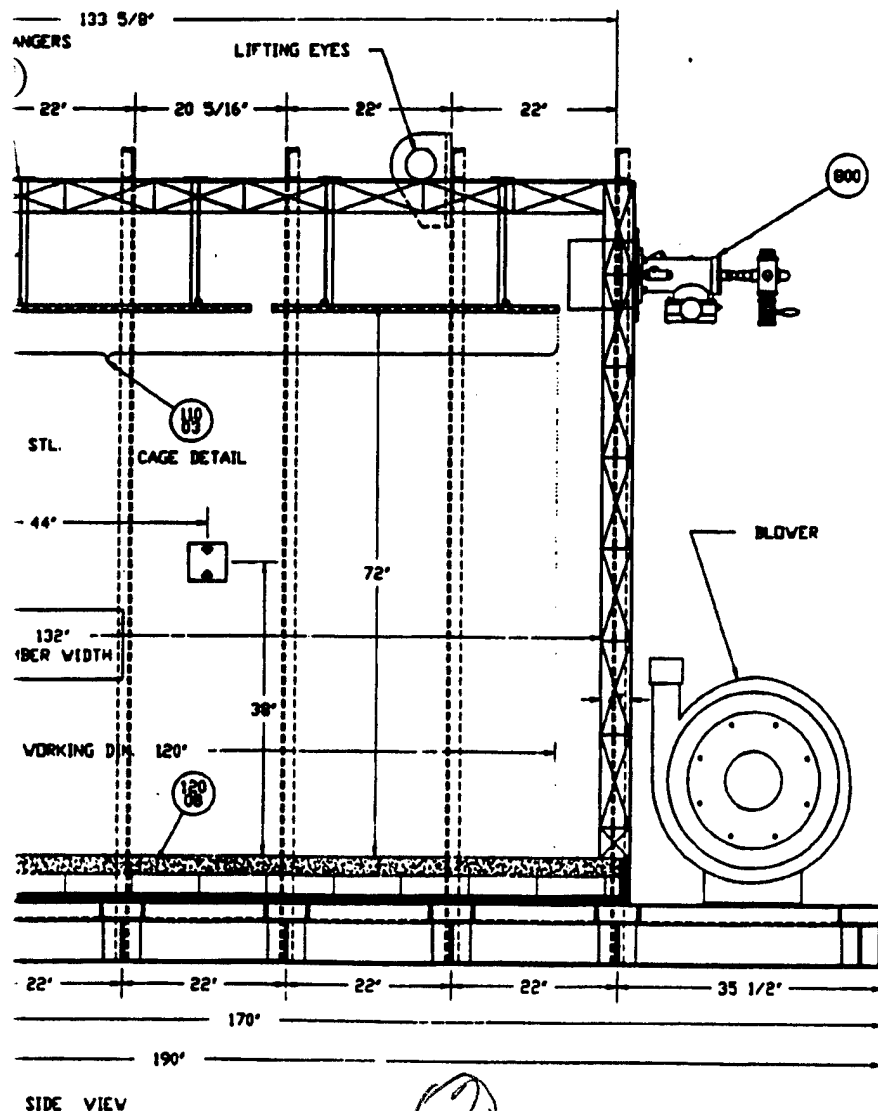


DRAWN BY <i>S. N. L.</i>		REV. CODE B	DRAWING NO. F928-01
DATE 5/25/95	SCALE .125		
CHK .	APP .		
JOB NO. WES-FBG5610	SER NO. 1294LL	SHEET NO. 4 of 4	
FILE NAME C:\P1\WESF928-F928-01.DWG		MADE FROM C:\P1\WESF928-F928-01 (Hatchman Steady)	





FOUNDATION LAYOUT



SIDE VIEW

MAJOR SPECIFICATIONS

VOLTAGE	480 VAC/ 3/ 60
HP / AMPS	2 HP / 10 AMPS
MAXIMUM BTU'S/HOUR	1,000,000
GAS INLET PRESSURE	5 PSI
MAX TEMP	1200°F
WORKING DIMENSIONS	54" V x 72" H x 120" D
CHAMBER DIMENSIONS	60" V x 84" H x 132" D
HEARTH	CASTABLE SECTIONS
MAX LOAD	3000 Lbs
GAS BURNER SYSTEM	ECLIPSE HVTA 104
ATMOSPHERE	AIR
CIRCULATION	BURNER VELOCITY
DOOR	DOUBLE PIVOTED HORIZONTAL
PAINT / FINISH	BLACK HIGH TEMP PRIMER WITH GREY-GREEN ENAMEL

CERTIFIED FOR CONSTRUCTION

FOR JOB # WES-FBG5610-1

SERIAL NO: S/N 1294LL

DATE: 10.11.94 BY: Gregory D. Lawicki

APPROVED BY: COLLEEN A. PARKER

DATE: 8/1/96 (CUSTOMER)

NOTES:

- SEE WESTON DRAWINGS 1300-01, 02, & 03 FOR EXHAUST DUCT MODIFICATIONS.

DO NOT SCALE THIS DRAWING.
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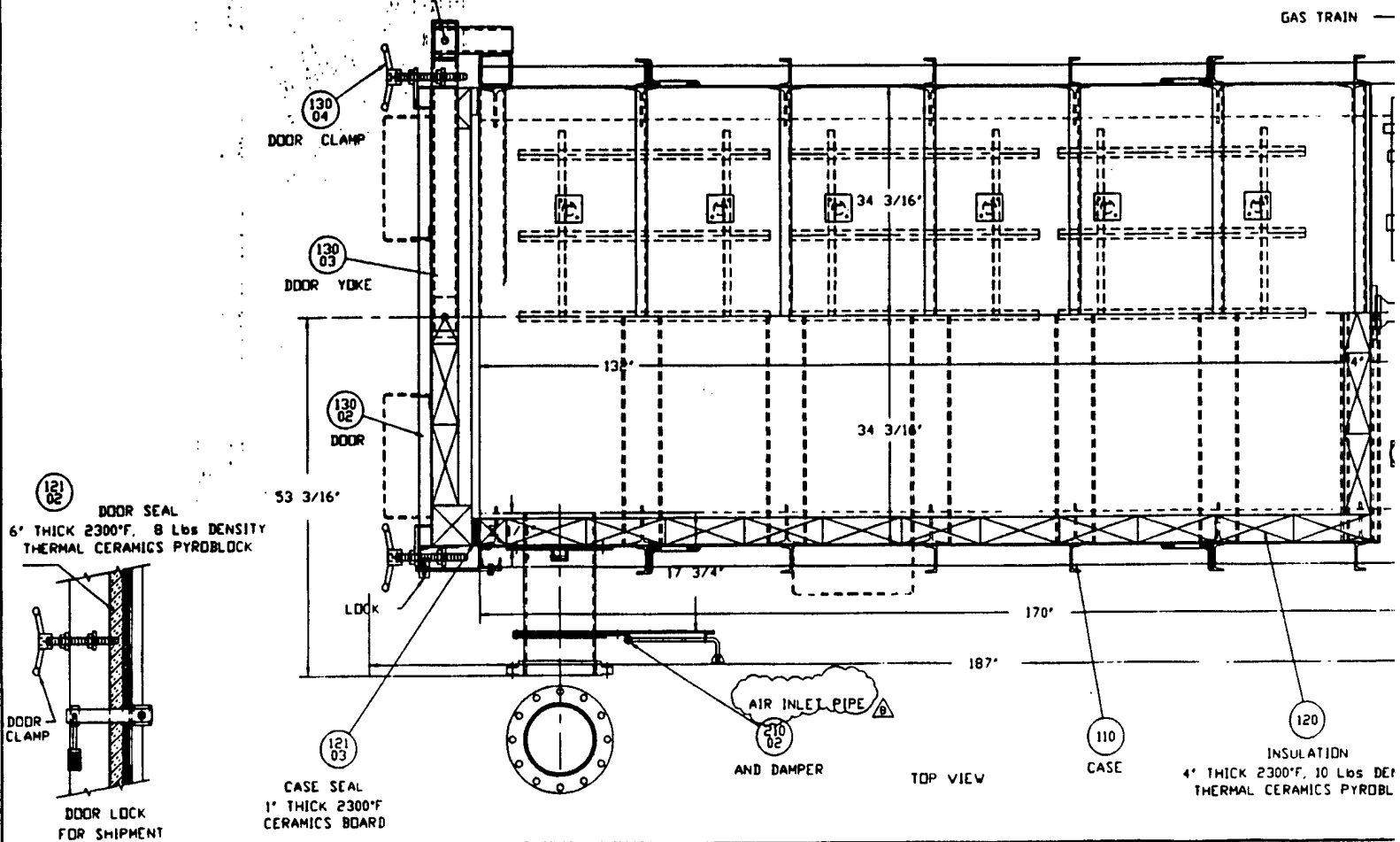
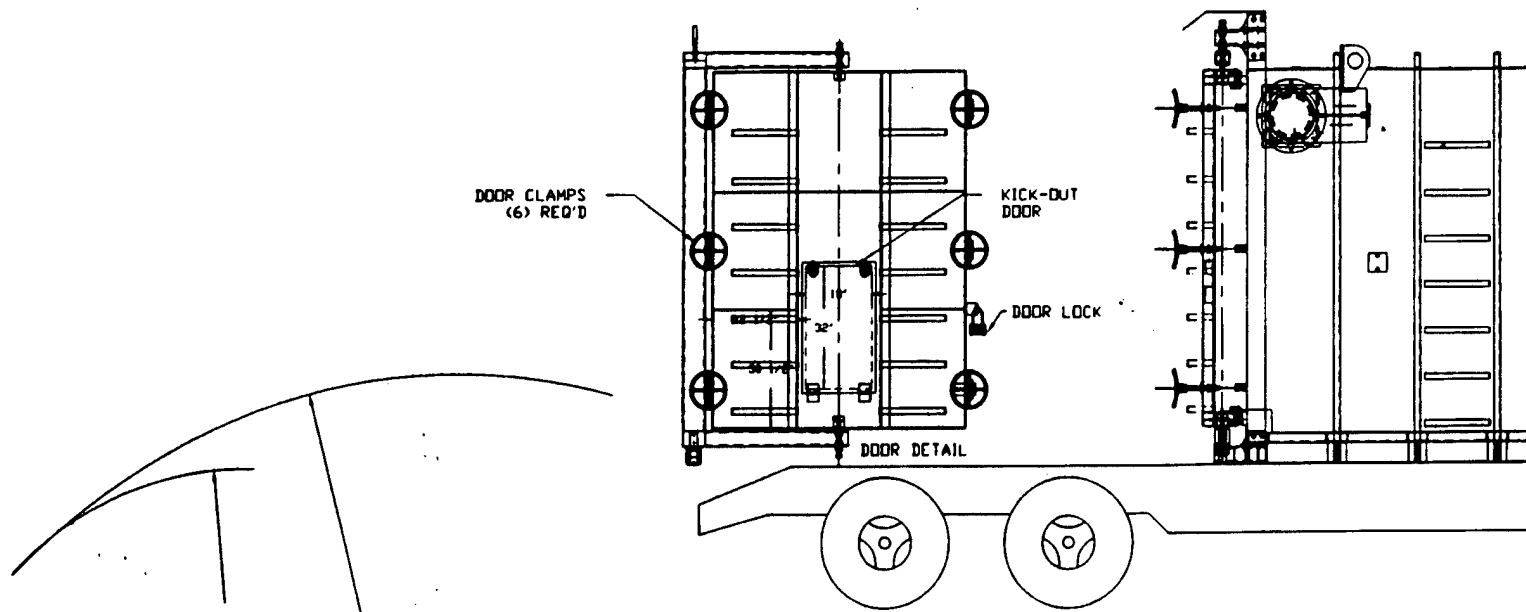
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REV#	DATE	REVISION DESCRIPTION

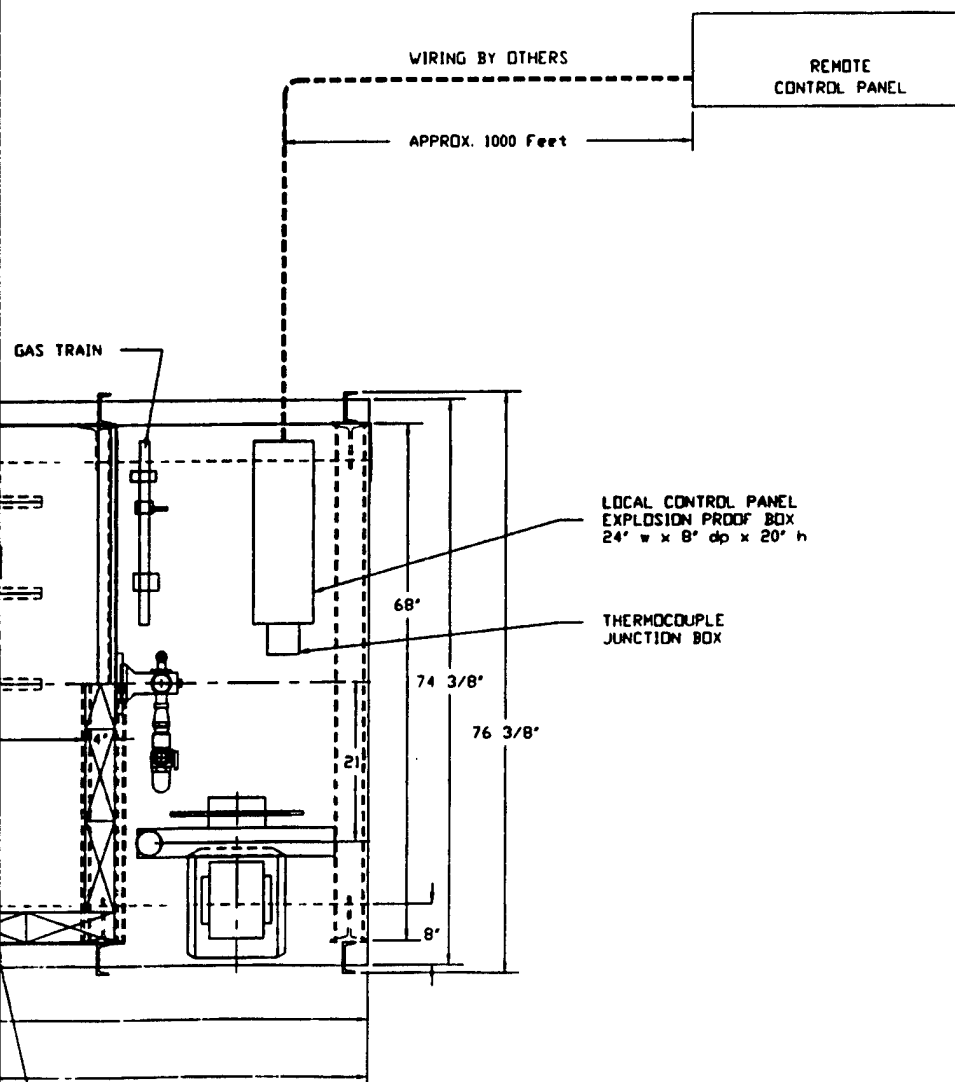
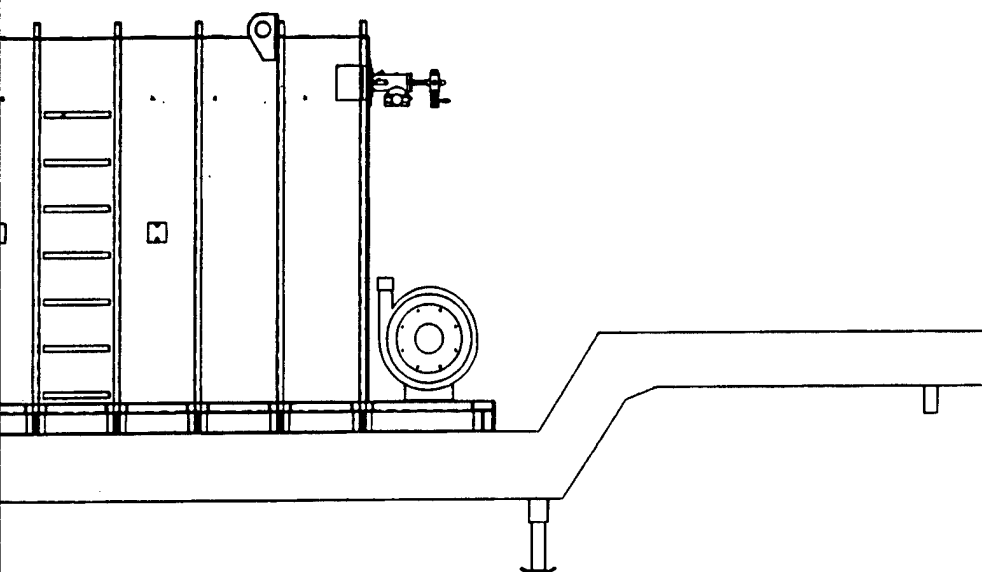


L & L SPECIAL FURNACE CO., INC
20 KENT RD. P.O. BOX 2129 ASTON, PA. 19014

MODEL FBG5610
GENERAL DIMENSION
AND
ASSEMBLY

DRAWN BY Andre Merdjanian	REV CODE B	DRAWING NO. F928-02
DATE 9-28-94	SCALE -	
CHK APP		
JOB NO. WES-FBG5610-1	SER NO. 1294LL	SHEET NO. 1 of 2
FILE NAME	MADE FROM	SCRATCH





INSULATION
1000°F, 10 Lbs DENSITY
FIBERGLASS PYROBLOCK

MAJOR SPECIFICATIONS

VOLTAGE	480 VAC / 3 / 60
HP / AMPS	2 HP / 10 AMPS
MAXIMUM BTUS/HOUR	1,000,000
GAS INLET PRESSURE	5 PSI
MAX TEMP	1200°F
WORKING DIMENSIONS	54" W x 72" H x 120" D
CHAMBER DIMENSIONS	60" W x 84" H x 132" D
HEARTH	CASTABLE SECTIONS
MAX LOAD	3000 Lbs
GAS BURNER SYSTEM	ECLIPSE MVTA 104
ATMOSPHERE	AIR
CIRCULATION	BURNER VELOCITY
DOOR	DOUBLE PIVOTED HORIZONTAL
PAINT / FINISH	BLACK HIGH TEMP PRIMER WITH GREY-GREEN ENAMEL

CERTIFIED FOR CONSTRUCTION

FOR JOB # WES-FBG5610-1

SERIAL NO. S/N 1294LL

DATE 10.11.94 BY Gregory D Lewicki

APPROVED BY Ch Parker

DATE 8/1/96 (CUSTOMER)

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A	5/1/95	AS BUILT
REV	DATE	REVISION DESCRIPTION

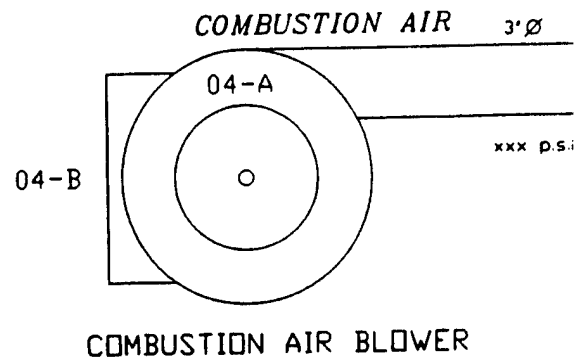
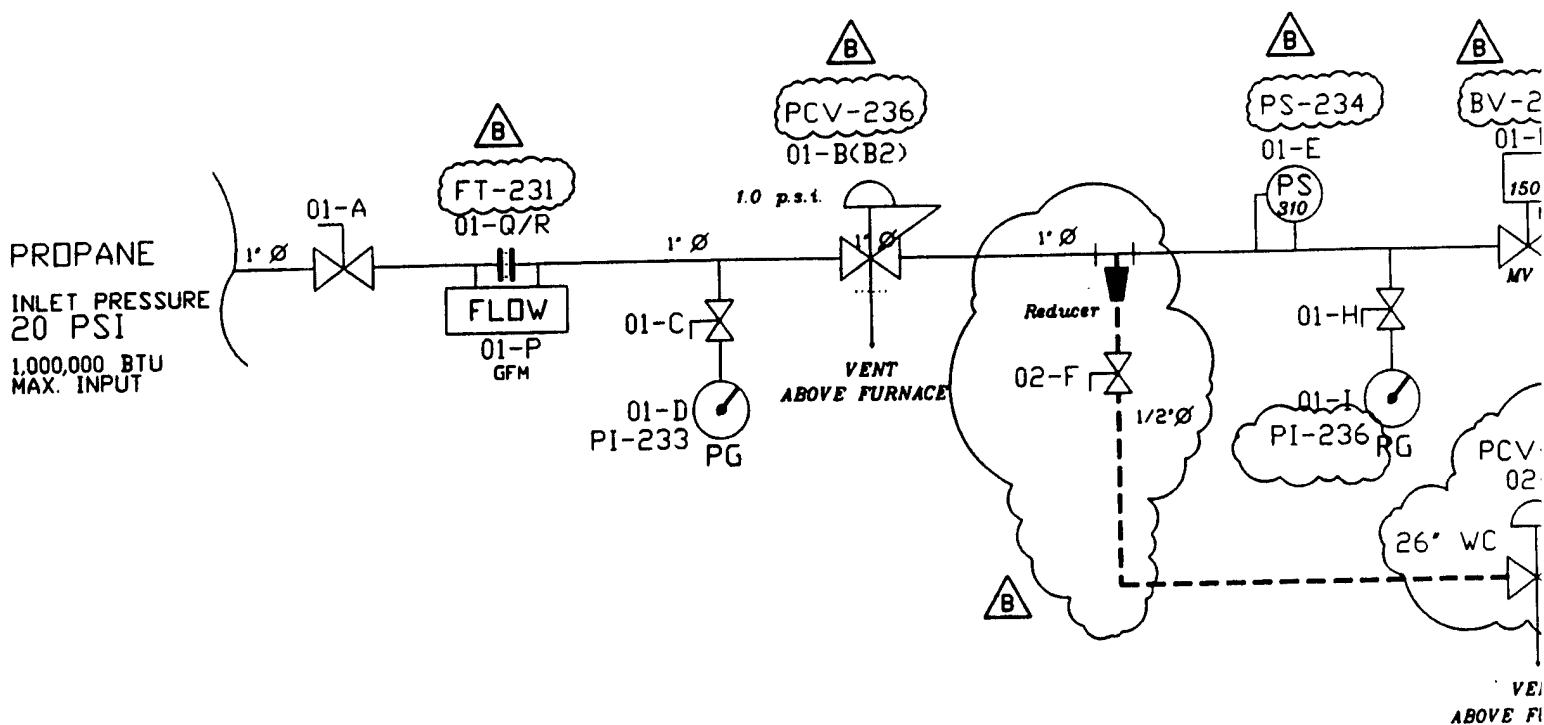


L & L SPECIAL FURNACE CO., INC

20 KENT RD. P.O. BOX 2129 ASTON, PA. 19014

MODEL FBG5610
GENERAL DIMENSION
AND
ASSEMBLY

DRAWN BY <u>Andre Merdjanian</u>	REV CODE	DRAWING NO
DATE <u>9-28-94</u>	SCALE <u>-</u>	B F928-02
CHK <u>-</u>	APP <u>-</u>	
JOB NO <u>WES-FBG5610-1</u>	SER NO <u>1294LL</u>	SHEET NO <u>2</u> OF <u>2</u>
FILE NAME <u>F:\L&L\WESTON\FBG5610\F928-02</u>	MADE FROM	SCRATCH



LEGEND:

- 800-01-..... ----- MAIN GAS TRAIN
- 800-02-..... ----- PILOT GAS TRAIN
- 800-03-..... ----- HVTA SYSTEM
- 800-04-..... ----- COMBUSTION AIR SYSTEM
- 800-05-..... ----- FLAME SAFETY & IGNITION SYSTEM

150 } Cross Reference to Electrical Drawing (F928-01)
GFM

1

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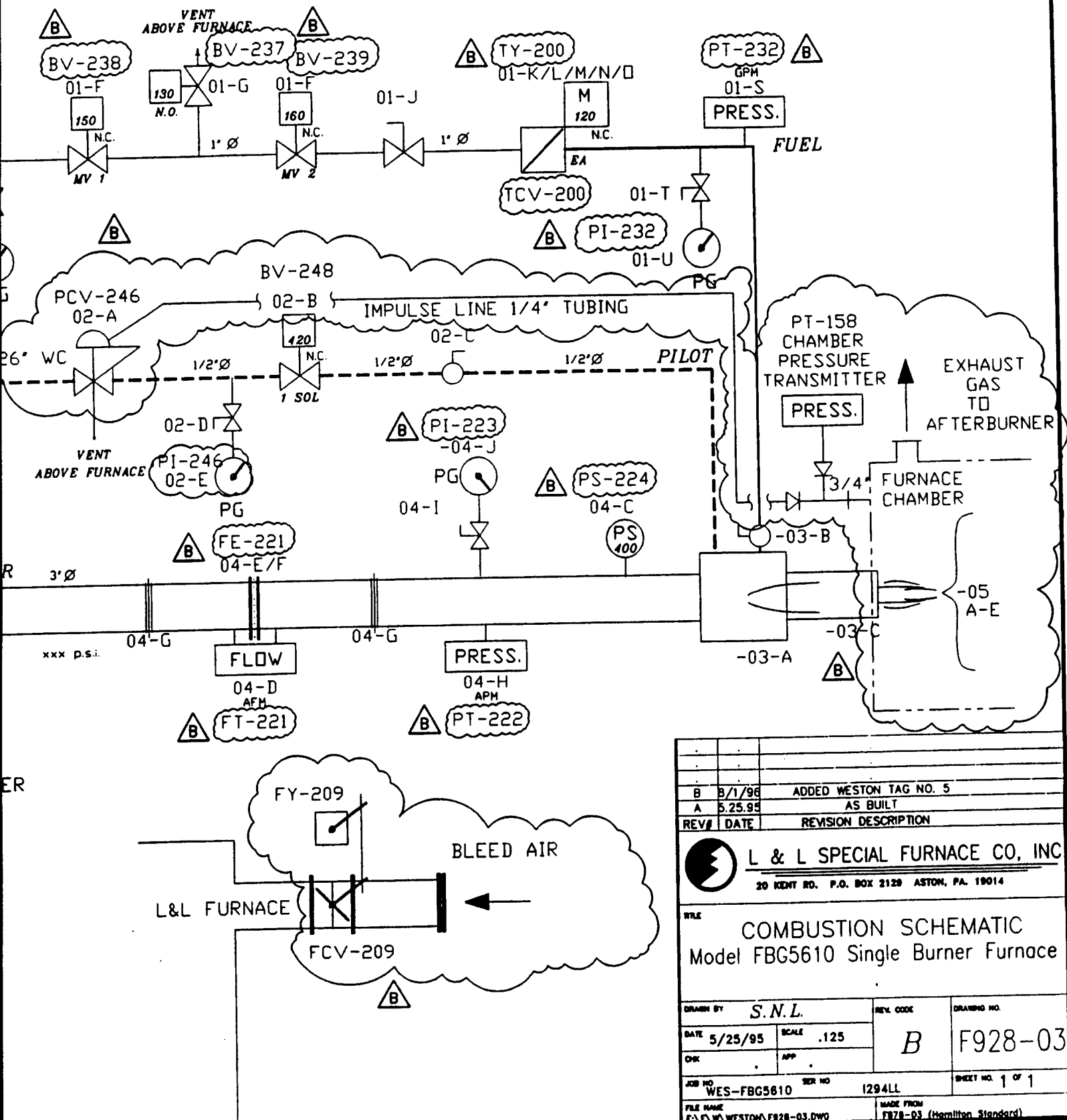
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DATE : 9/28/94 BY : S.N.L.

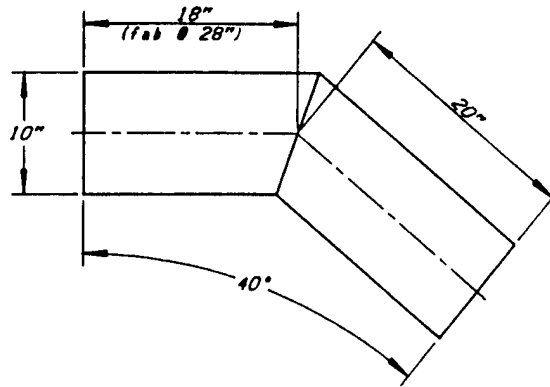
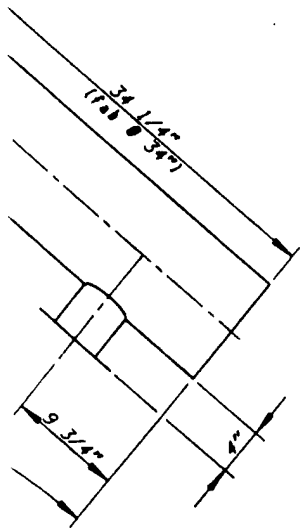
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DATE : _____

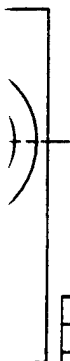
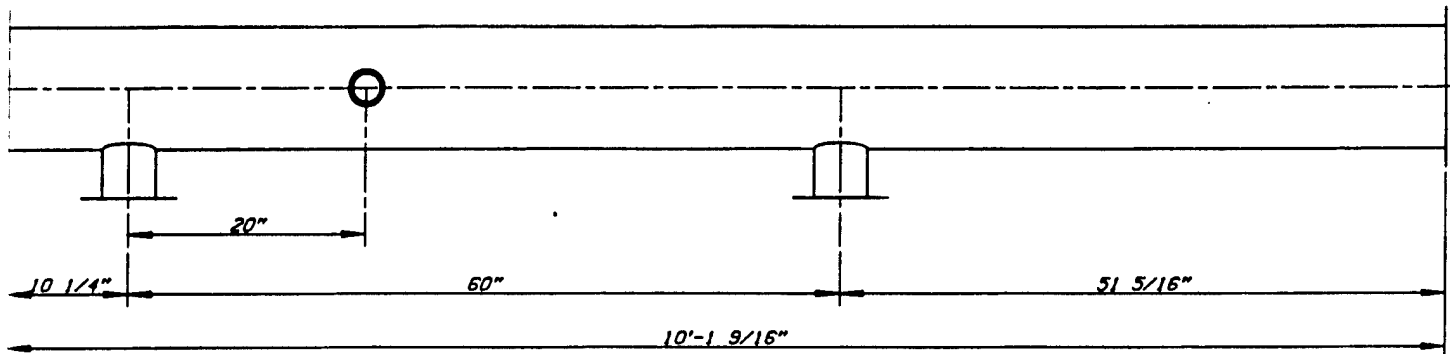


REV#	DATE	REVISION DESCRIPTION
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A	5.25.95	AS BUILT
REV#	DATE	REVISION DESCRIPTION
L & L SPECIAL FURNACE CO., INC. 20 KENT RD. P.O. BOX 2129 ASTON, PA. 19014		
COMBUSTION SCHEMATIC Model FBG5610 Single Burner Furnace		
DRAWN BY	S.N.L.	REV. CODE
DATE	5/25/95	SCALE .125
CHK	APP	
JOB NO.	WES-FBG5610	SER NO. 1294LL
FILE NAME	FAV-WESTON\F928-03.DWG	MADE FROM F928-03 (Hamilton Standard)
DRAWING NO.	B	F928-03
SHEET NO.	1	OF 1

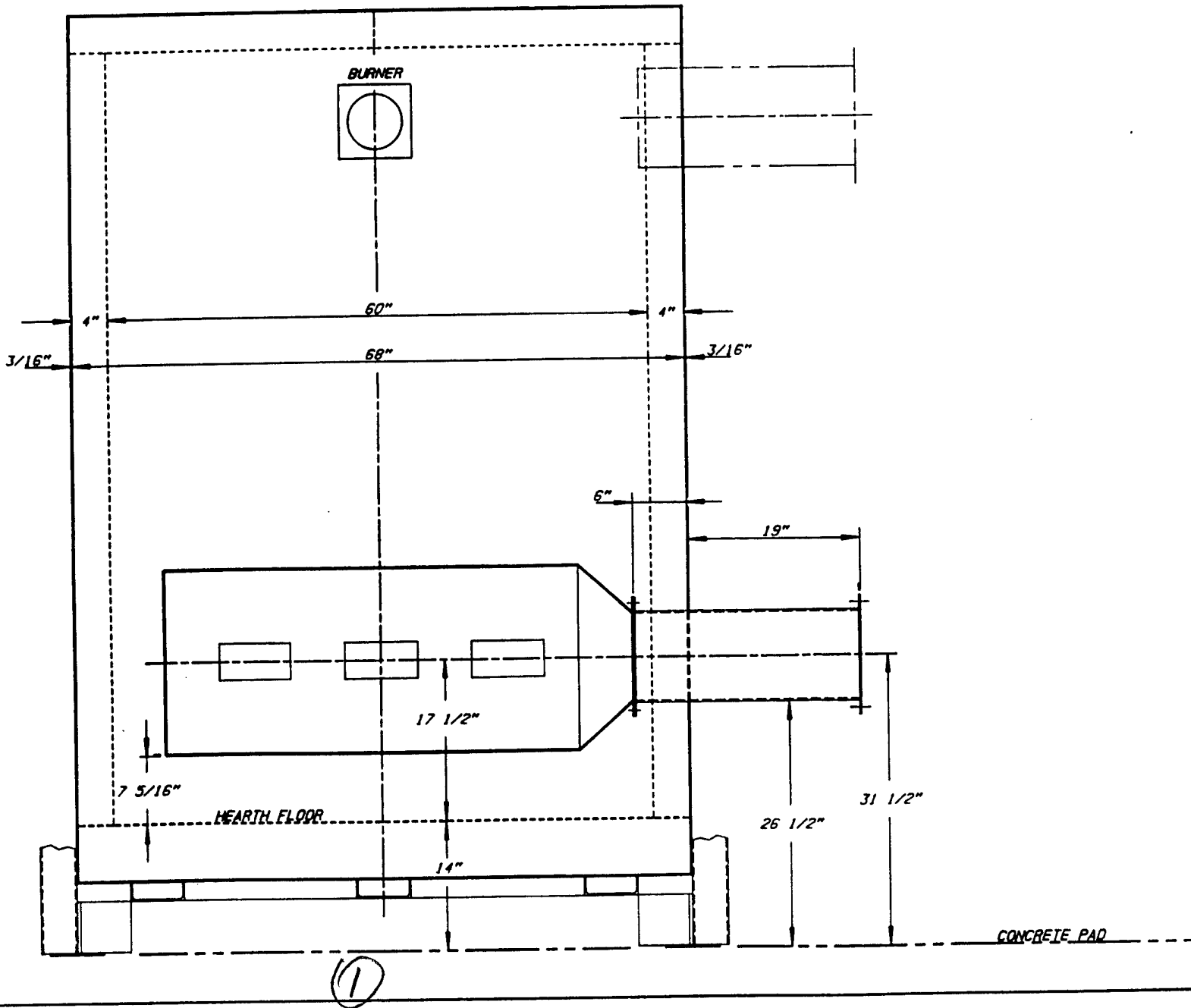
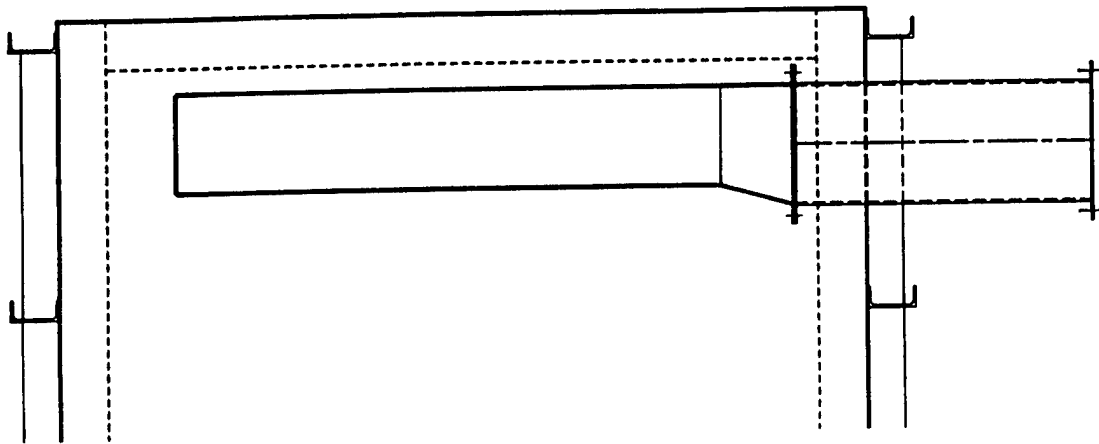
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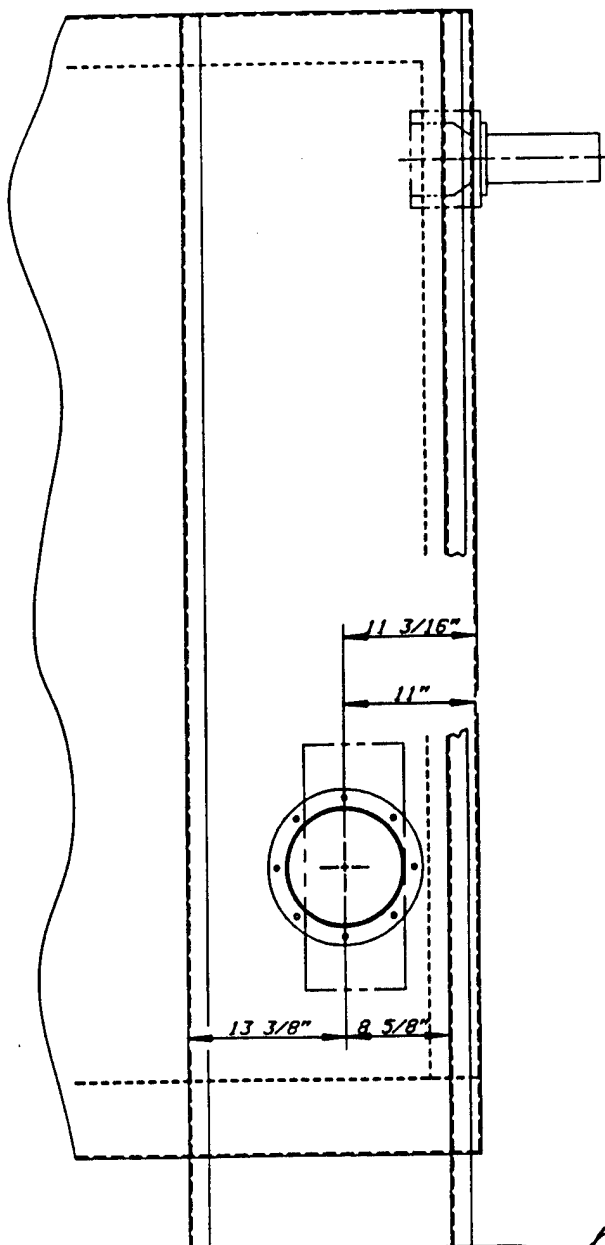


40° ELBOW
11 GA. STEEL




				HOT-GAS DECONTAMINATION SYSTEM		INTERCONNECT DUCT							
						DESIGN	J. HYRE	DATE	12/27/95	DWG. NO.	1300-01	REV.	01
						SCALE	1/2" = 1'-0"	W.D. NO.	02281-012-012	SHEET 1 OF 1			
NO.	DATE	APPROV.	REVISION	WEST CHECKER		PENNSYLVANIA							
-	12/7/95		AS-BUILT DRAWING										

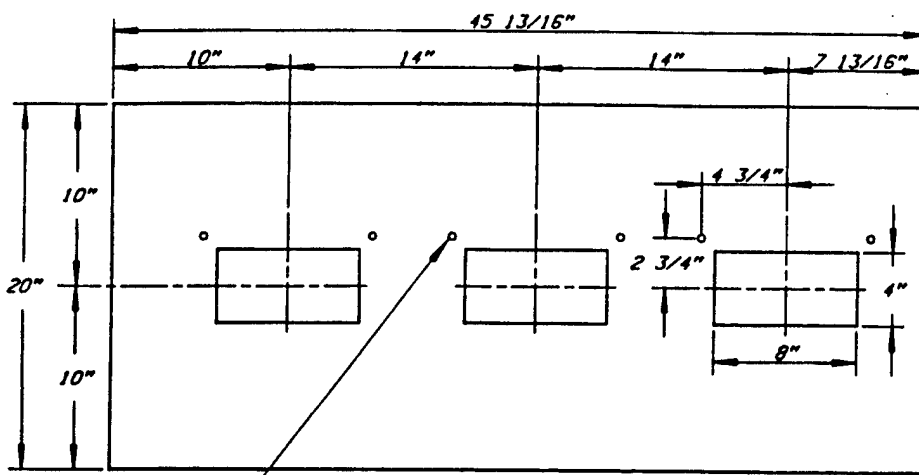




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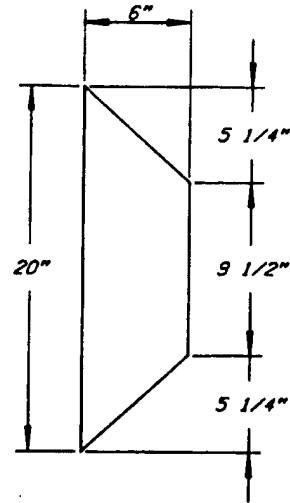
2

<h1 style="margin: 0;">HOT-GAS DECONTAMINATION SYSTEM</h1>			
			
NEW CHESTER		PENNSYLVANIA	
<h2 style="margin: 0;">EXHAUST PLENUM ASSEMBLY</h2>			
DRAWN <div style="border: 1px solid black; padding: 2px; text-align: center;">J. HYRE</div>	DATE <div style="border: 1px solid black; padding: 2px; text-align: center;">1/1/96</div>	DES. NO. <div style="border: 1px solid black; padding: 2px; text-align: center; font-size: 1.5em;">1300-02</div>	REV. NO. <div style="border: 1px solid black; padding: 2px; text-align: center;">—</div>
SCALE <div style="border: 1px solid black; padding: 2px; text-align: center;">1/8" = 1"</div>	I.D. NO. <div style="border: 1px solid black; padding: 2px; text-align: center;">02281-012-012</div>		SHIP _____ OF _____
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NO.	DATE	APPROV.	REVISION

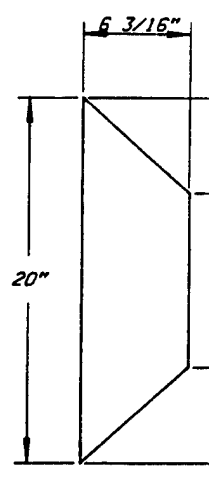


(16) 13/32" DIA. HOLES, DRILL THRU

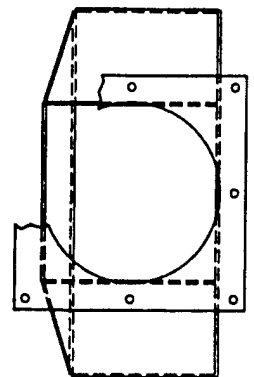
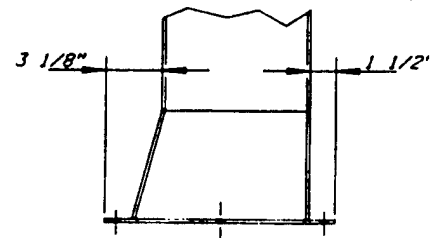
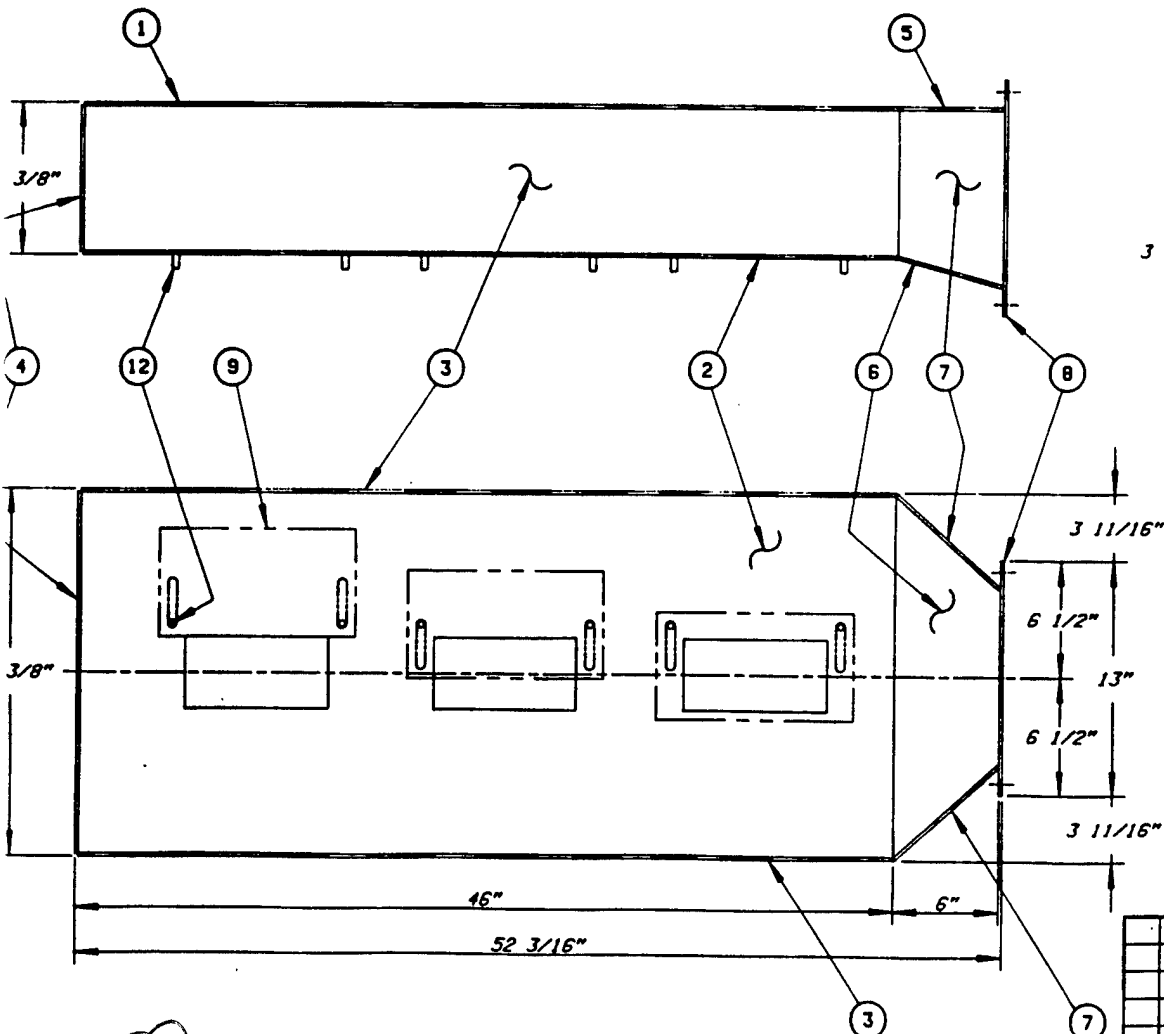
DETAIL ITEM 2
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DETAIL ITEM 5
(1) REQ'D



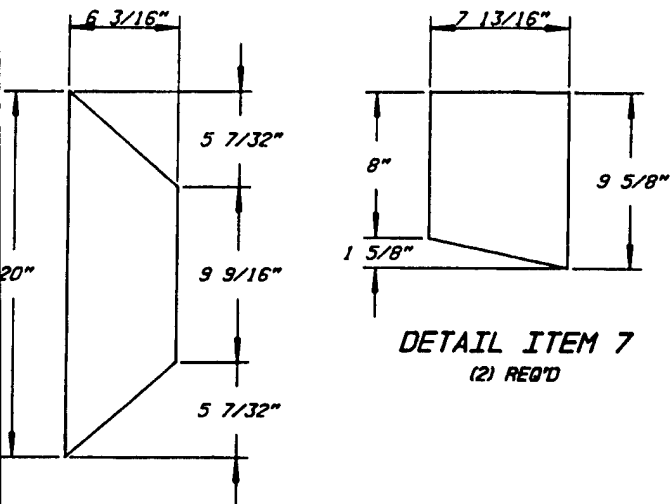
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EXHAUST PLENUM WELDMENT

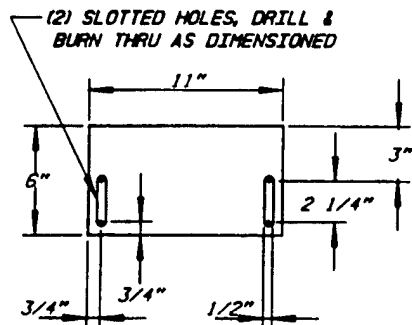
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1/1/76 AS-BUILT DRAWING

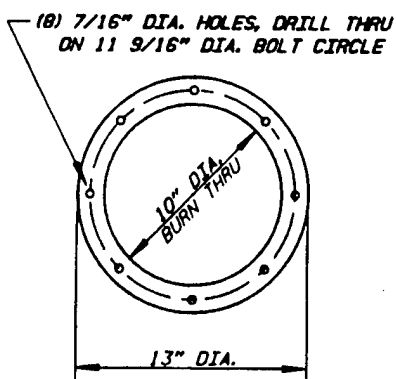


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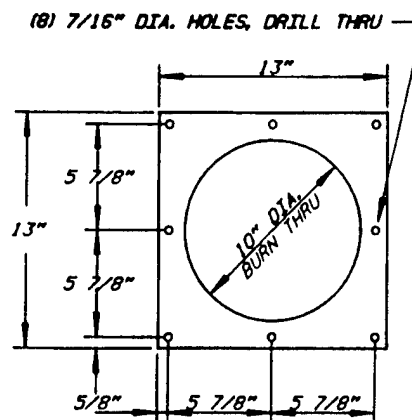
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(1) REQ'D



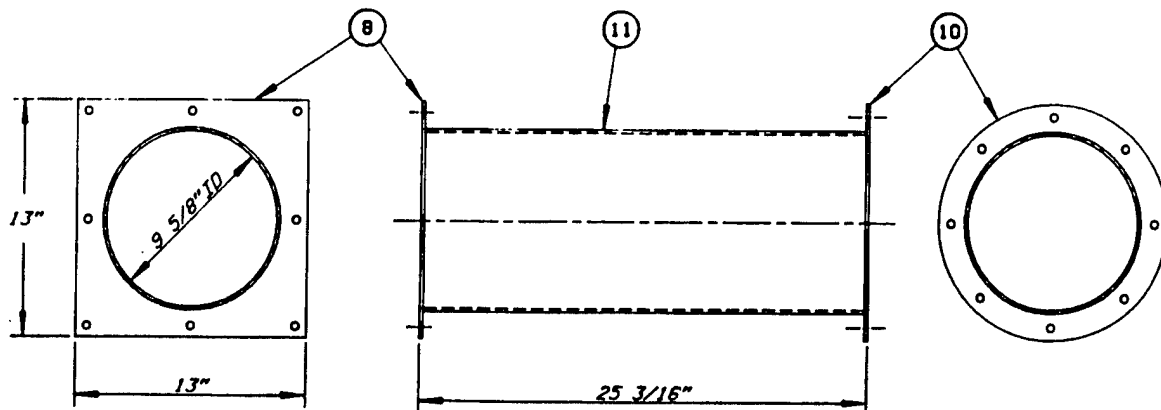
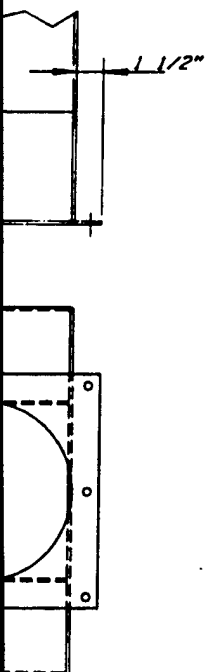
DETAIL ITEM 9
(3) REQ'D



DETAIL ITEM 10
(1) REQ'D



DETAIL ITEM 8
(2) REQ'D



WELDMENT ITEMS 8, 10, & 11

BILL OF MATERIAL

ITEM	REQ'D	DESCRIPTION	WGT
1	1	3/16" X 20" X 45 13/16" LG, HRS PLATE, A-36	
2	1	3/16" X 20" X 45 13/16" LG, HRS PLATE, A-36,(SEE DETAIL)	
3	2	3/16" X 8" X 45 13/16" LG, HRS PLATE, A-36	
4	1	3/16" X 8" X 20" LG, HRS PLATE, A-36	
5	1	3/16" X 6" X 20" LG, HRS PLATE, A-36,(SEE DETAIL)	
6	1	3/16" X 6 3/16" X 20" LG, HRS PLATE, A-36,(SEE DETAIL)	
7	2	3/16" X 7 13/16" X 9 5/8" LG,HRS PLATE,A-36,(SEE DETAIL)	
8	2	3/16" X 13" X 13" LG, HRS PLATE, A-36,(SEE DETAIL)	
9	3	3/16" X 6" X 11" LG, HRS PLATE, A-36,(SEE DETAIL)	
10	1	3/16" X 10"ID X 13"OD, HRS PLATE, A-36,(SEE DETAIL)	
11	1	9 5/8"ID X 10"OD X 25" LG,ROLLED DUCT, HRS PLATE, A-36	
12	6	3/8-16 X 1" LG, SS HEX BOLTS w/NUTS	
13	8	3/8-16 X 1 1/2" LG, SS HEX BOLTS w/NUTS	
TOTAL			

HOT-GAS DECONTAMINATION SYSTEM

EXHAUST PLENUM DETAILS

WESTON
MANUFACTURING CORPORATION

DESIGN J. HYRE	DATE 1/6/96	REV NO. 1300-03	REV NO. -
SCALE 3/16" = 1"	P.O. NO. 02281-012-012		

THERMAL OXIDIZER EQUIPMENT

<u>DRAWING NO.:</u>	<u>REV. NO.:</u>	<u>DRAWING DATE</u>	<u>DRAWING DESCRIPTION</u>
OA	4	8/1/96	COVER SHEET
1X	2	3/10/95	SHIPPING CLEARANCE
2X	1	3/10/95	SHIPPING CLEARANCE
1A	3	8/17/96	GENERAL ARRANGEMENT
1B	2	8/17/96	GENERAL ARRANGEMENT
1SA	1	3/10/95	STEEL ARRANGEMENT
1SB	2	6/1/96	STEEL ARRANGEMENT
1SC	2	5/26/95	STEEL ARRANGEMENT
1SD	1	3/10/95	STEEL ARRANGEMENT
2A	2	3/10/95	FOUNDATION PLAN
FTA120-1	3	8/1/96	FUEL TRAIN ASSEMBLY
FTA120-2	3	8/1/96	FUEL TRAIN ASSEMBLY
AES -5-53	0	1/11/95	SIGHT PORT w/ VALVE

①

THERMAL OXIDIZER EQUIPMENT

ER EQUIPMENT

DRAWING DESCRIPTION

COVER SHEET

SHIPPING CLEARANCES

SHIPPING CLEARANCES

GENERAL ARRANGEMENT: PLAN & ELEV.

GENERAL ARRANGEMENT: SECTIONS

TEEL ARRANGEMENT: AFTERBURNER

TEEL ARRANGEMENT: STACK & DETAIL

TEEL ARRANGEMENT: DETAILS

TEEL ARRANGEMENT: SKID & DETAILS

FOUNDATION PLAN

FUEL TRAIN ASSEMBLY - AFTERBURNER

FUEL TRAIN ASSEMBLY - AFTERBURNER

IGHT PORT w/ VALVE - 4" DIAMETER

2

JOB: IJ-

SERVICE: AFTER

CUSTOMER: ROY I

LOCATION: ALP

DRAWING INDEX

STANDARD DRAWING INI

AES-5-53

4" 0 SIGHT PORT W

DWG. NO.	REV	TITLE
0A	3	COVER SHEET
1X	2	SHIPPING CLEARANCE
2X	1	SHIPPING CLEARANCE
1A	2	GENERAL ARRANGEMENT - PLAN & ELEV.
1B	1	GENERAL ARRANGEMENT - SECTIONS
1SA	1	STEEL ARRANGEMENT - AFTER BURNER
1SB	1	STEEL ARRANGEMENT - STACK & DETAILS
1SC	1	STEEL ARRANGEMENT - DETAILS
1SD	1	STEEL ARRANGEMENT - SKID & DETAILS
2A	2	FOUNDATION PLAN
PID120	0	P & I D AFTERBURNER
LCP120-1	0	LOCAL CONTROL PANEL ASSEMBLY
LCP120-2	0	LOCAL CONTROL PANEL ASSEMBLY
LCP120-3	0	LOCAL CONTROL PANEL ASSEMBLY
RCP120-1	0	REMOTE CONTROL PANEL ASSEMBLY
RCP120-2	0	REMOTE CONTROL PANEL ASSEMBLY
ES120-1	0	ELECTRICAL SCHEMATIC AFTERBURNER
ES120-2	0	ELECTRICAL SCHEMATIC AFTERBURNER
ES120-3	0	ELECTRICAL SCHEMATIC AFTERBURNER
ES120-4	0	ELECTRICAL SCHEMATIC AFTERBURNER
ES120-5	0	ELECTRICAL SCHEMATIC AFTERBURNER
IC120-1	0	INTERCONNECTION DIAGRAM AFTERBURNER
IC120-2	0	INTERCONNECTION DIAGRAM AFTERBURNER
IC120-3	0	INTERCONNECTION DIAGRAM AFTERBURNER
FTA120-1	3	FUEL TRAIN ASSEMBLY AFTERBURNER
FTA120-2	3	FUEL TRAIN ASSEMBLY AFTERBURNER
FTF120	0	FUEL RACK FABRICATION

9			
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4	CAP	8/1/96	JLB
3	OU	3/17/96	JLB
2	OU	2/15/95	JLB
1	OU	1/11/95	JLB
NO	BY	DATE	CHK'D

IJ-120

R BURNER SYSTEM

ROY F. WESTON, INC.


ALPINE, ALABAMA

DRAWING INDEX

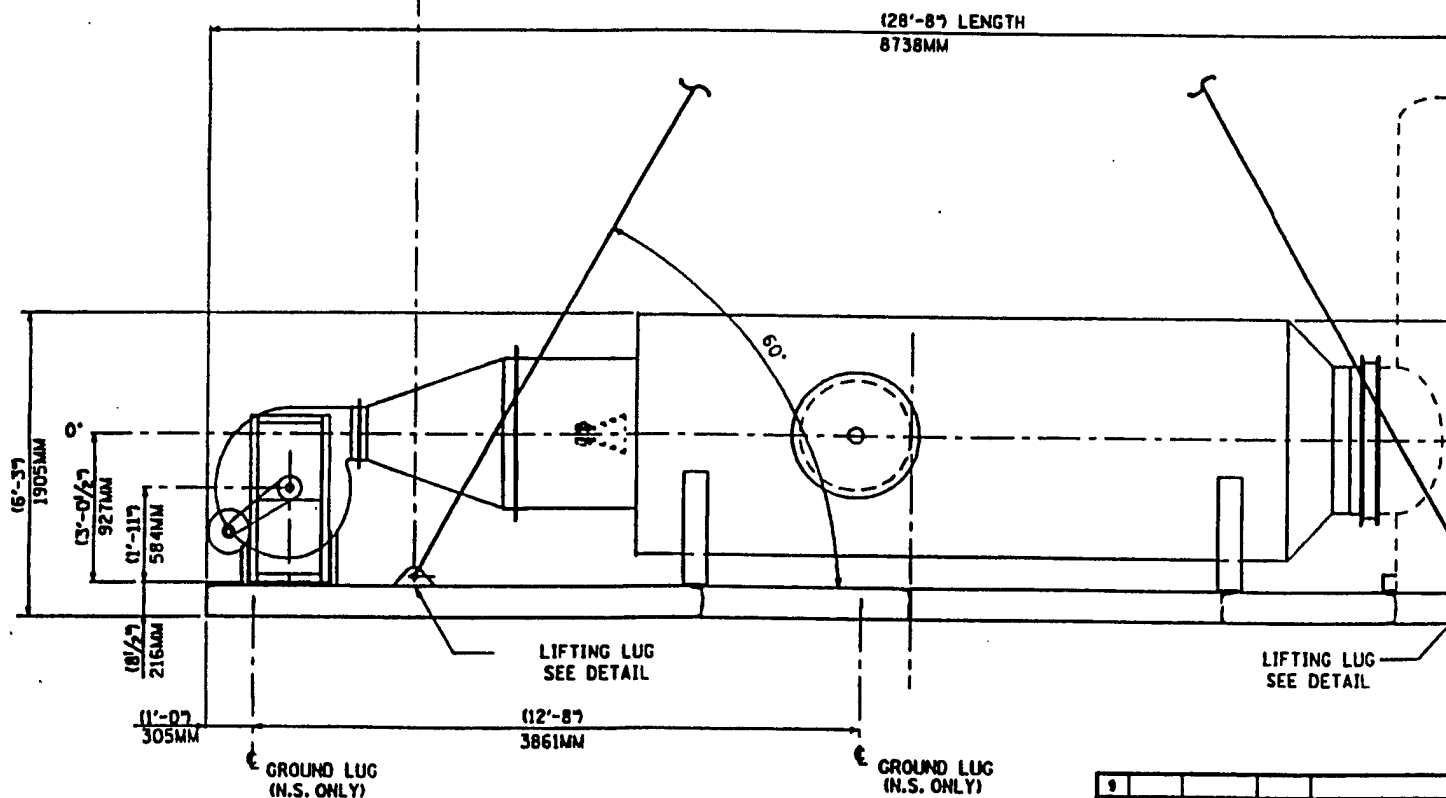
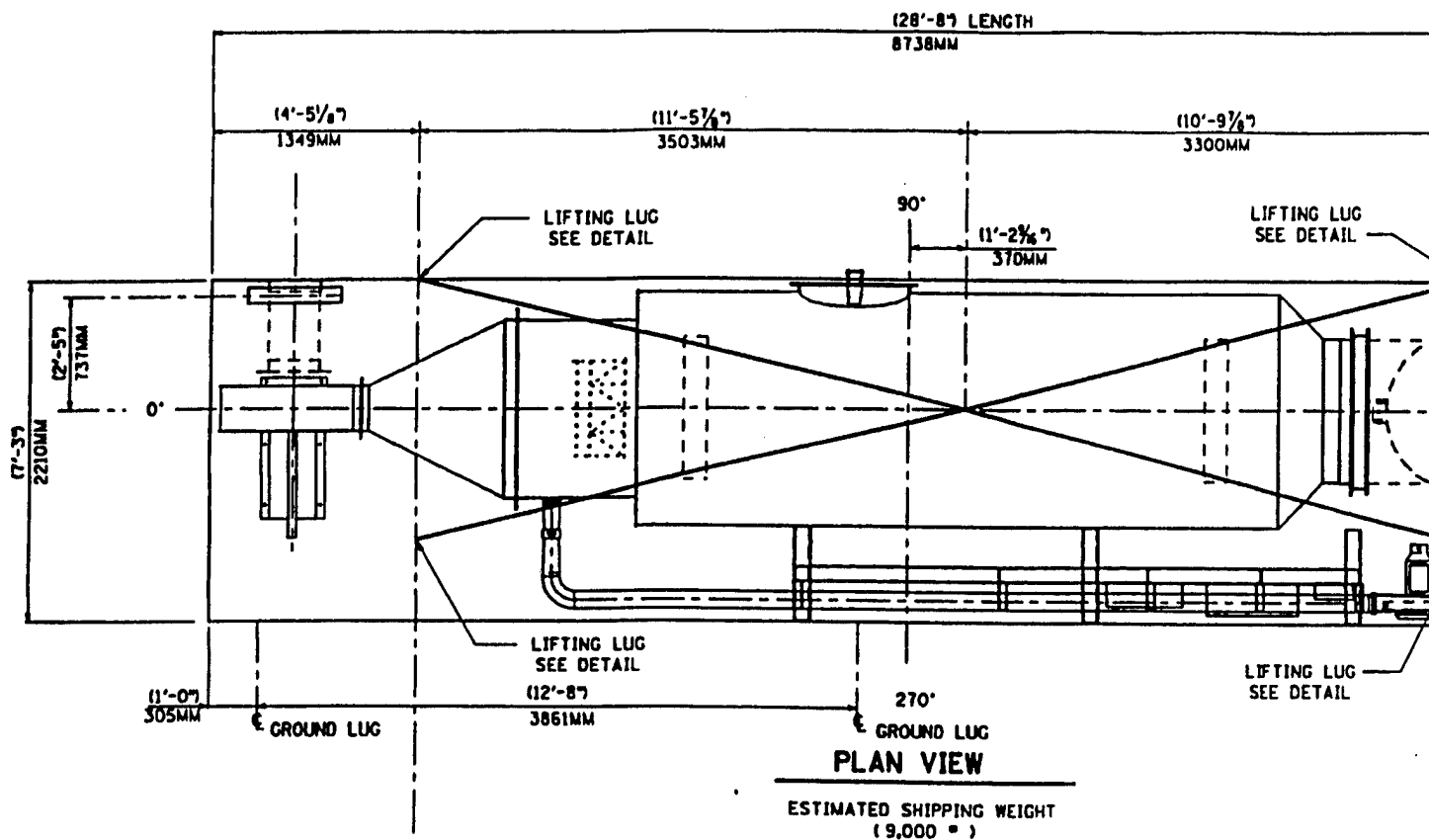
4" SIGHT PORT W/VALVE

GENERAL NOTES

1. ALL STRUCTURAL STEEL TO BE ASTM A36 UNLESS NOTED.
2. FABRICATE PER AISC 9TH. EDITION
3. ALL STRUCTURAL WELDING TO BE PER AWS D1.1

				JOB INFORMATION		TULSA OKLAHOMA		BLOOMINGTON MINNESOTA			
				CUSTOMER: ROY F. WESTON, INC		 ENVIRONMENTAL SYSTEMS, INCORPORATED		DRAWING TITLE COVER SHEET			
				P.O. NO.: 43366							
				JOBSITE: ALPINE, AL							
				END USER: U.S. ARMY ENVIRONMENTAL CENTER							
				SERVICE: AFTER BURNER SYSTEM		DRAWN BY: OU		DATE: 10/13/94		JOB NO: UJ-120	
				ARRTECH JOB NO.: UJ-120		CHK'D BY: JLB		DATE: 1/11/95		DRAWING NO: 0A	
						APPR'D BY:		DATE:		REVISION NO: 4	
BY	DATE	CHK'D	REVISION DESCRIPTION								

CADD DWG: UJ120-0A.DGN
CADD DWG: UJ1200A.DWG



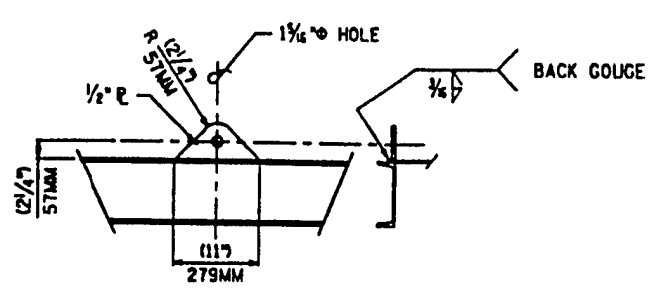
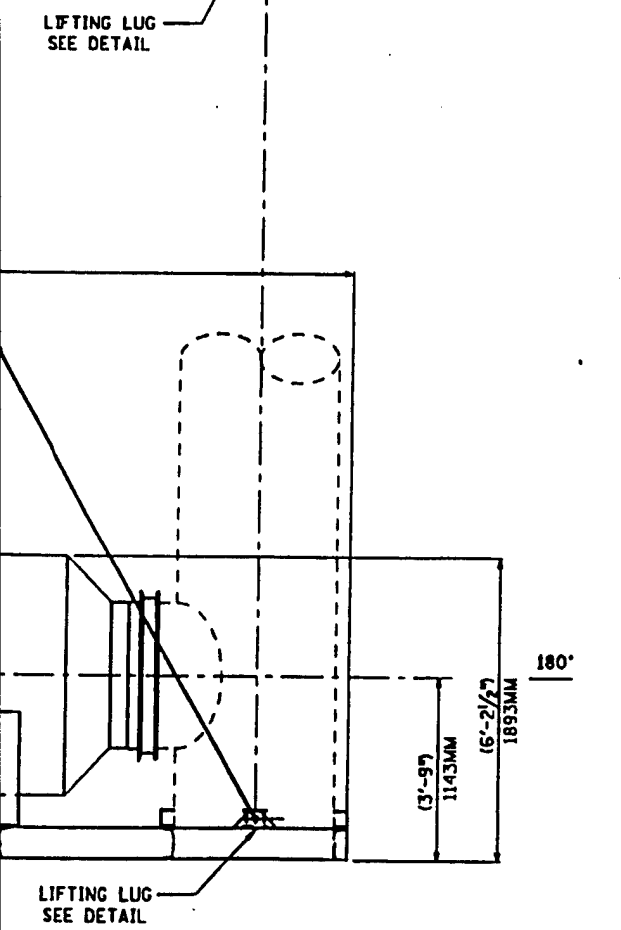
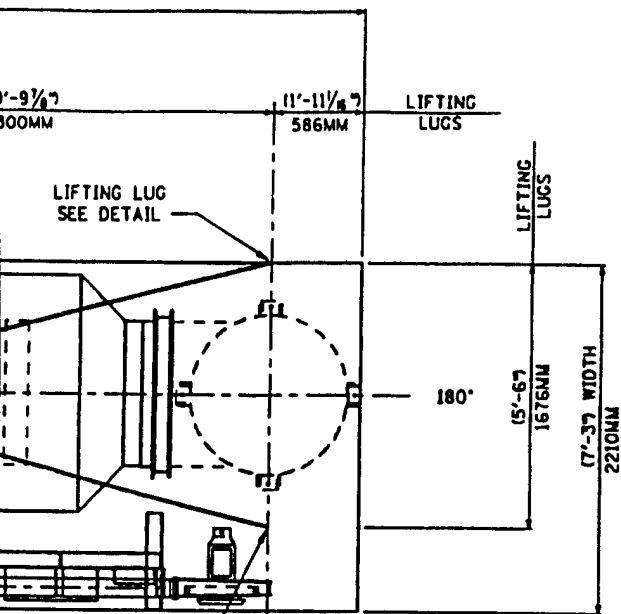
NOTE:
 (N.S.) INDICATES NEAR SIDE
 (F.S.) INDICATES FAR SIDE

ELEVATION VIEW

(270°)

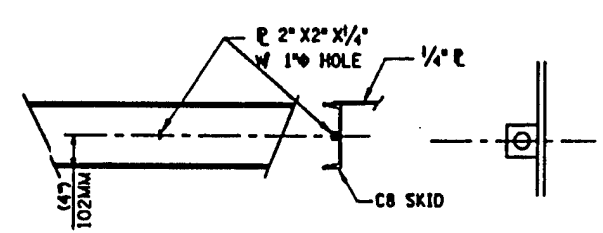
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2	QU	3/10/95	J.B	REVISED INLET DU
1	QU	1/10/95	J.B	REVISED PER CUS
NO.	BY	DATE	CHK'D	

1



LIFTING LUG

(4 THUS)



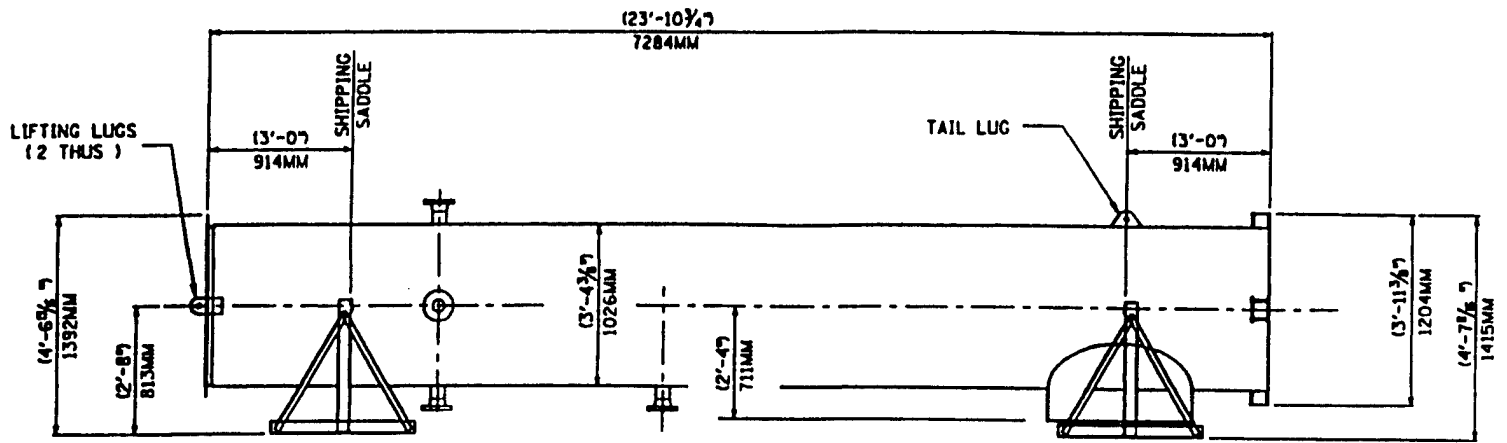
GROUND LUG

(2 THUS)

NOTES:

1. FOR LIFTING PURPOSES, WEIGHTS OF SECTIONS SHALL BE AS SHIPPED WEIGHT TAKEN FROM THE FREIGHT BILL OF LADING FOR THE PARTICULAR SECTION. ALL OTHER WEIGHTS ARE TO BE CONSIDERED ESTIMATES ONLY AND NOT SUITABLE FOR THIS PURPOSE. IF THE BILL OF LADING DOES NOT INCLUDE THIS WEIGHT, ARRTech ENGINEERING MUST BE CONTACTED FOR THE AS SHIPPED WEIGHT.
2. LENGTH, WIDTH AND HEIGHT SHOWN ARE APPROXIMATE DIMENSIONS. ACTUAL SHIPPING DIMENSIONS ARE TO BE VERIFIED BY SHIPPING AGENT AT FINAL FABRICATION SITE. OVERALL DIMENSIONS FOR PERMITS SHALL BE MEASURED BY THE SHIPPING AGENT AFTER SECTIONS ARE LOADED FOR SHIPMENT.
3. ESTIMATED WEIGHTS INCLUDE ALL SHOP INSTALLED REFRACTORY.

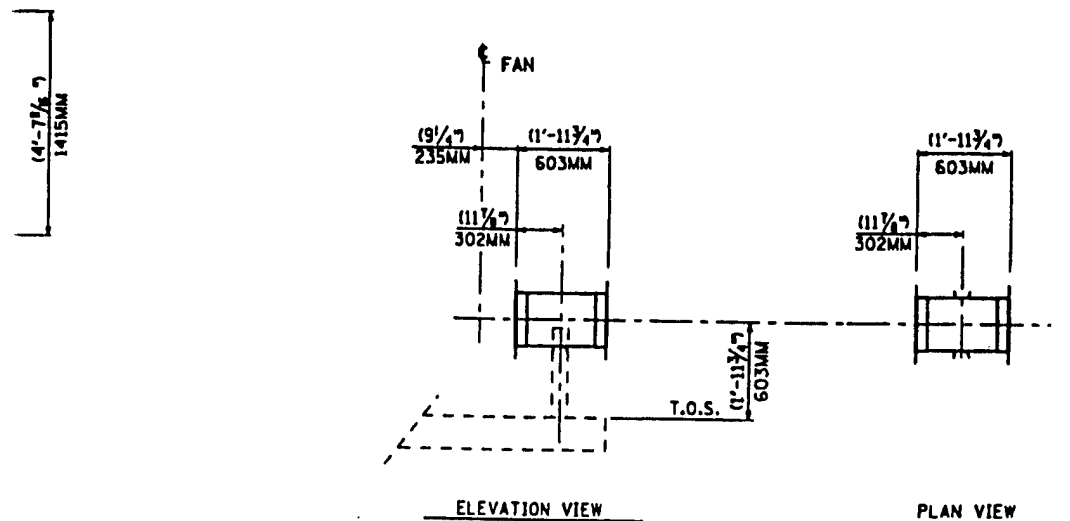
				JOB INFORMATION		<div>Arrtech</div> <div>TULSA OKLAHOMA</div> <div>ENVIRONMENTAL SYSTEMS, INCORPORATED</div> <div>BLOOMINGTON MINNESOTA</div>	
				CUSTOMER: ROY F. WESTON, INC.		DRAWING TITLE	
				P.O. NO. 1 43366			
				JOB SITE: ALPINE, AL.		SHIPPING CLEARANCES	
				END USER: U.S. ARMY ENVIRONMENTAL CENTER			
				SERVICE: AFTER BURNER SYSTEM		DRAWN BY DJ	
				ARRTECH JOB NO. 1 LJ-120			
95	JLB	REVISED INLET DUCT / ADD PANEL LOCATION & GROUND LUGS				DATE 10/13/94	JOB NO. 1J-120
95	JLB	REVISED PER CUSTOMER COMMENTS				DATE 1/10/95	DRAWING NO. 1X
E	CHK'D	REVISION DESCRIPTION				APPR'D BY	REVISION NO. 12



STACK SECTION
 ESTIMATED SHIPPING WEIGHT
 (4,500 •)

9				
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5				
4				
3				
2				
1	OU	3/10/95	JLB	REL
NO.	BY	DATE	CHK'D	


1



AIR INLET DUCT
ESTIMATED SHIPPING WEIGHT
(175 •)

NOTES:

1. FOR LIFTING PURPOSES, WEIGHTS OF SECTIONS SHALL BE AS SHIPPED WEIGHT TAKEN FROM THE FREIGHT BILL OF LADING FOR THE PARTICULAR SECTION. ALL OTHER WEIGHTS ARE TO BE CONSIDERED ESTIMATES ONLY AND NOT SUITABLE FOR THIS PURPOSE. IF THE BILL OF LADING DOES NOT INCLUDE THIS WEIGHT, ARRTech ENGINEERING MUST BE CONTACTED FOR THE AS SHIPPED WEIGHT.
2. LENGTH, WIDTH AND HEIGHT SHOWN ARE APPROXIMATE DIMENSIONS. ACTUAL SHIPPING DIMENSIONS ARE TO BE VERIFIED BY SHIPPING AGENT AT FINAL FABRICATION SITE. OVERALL DIMENSIONS FOR PERMITS SHALL BE MEASURED BY THE SHIPPING AGENT AFTER SECTIONS ARE LOADED FOR SHIPMENT.
3. ESTIMATED WEIGHTS INCLUDE ALL SHOP INSTALLED REFRACTORY.

		JOB INFORMATION		 TULSA, OKLAHOMA BLOOMINGTON, MINNESOTA			
		CUSTOMER: ROY F. WESTON, INC.					
		P.O. NO.: 43364					
		JOBSITE: ALPINE, AL.					
		END USER: U.S. ARMY ENVIRONMENTAL CENTER					
		SERVICE: AFTER BURNER SYSTEM		DRAWING TITLE: SHIPPING CLEARANCES			
J.B. REMOVED ACCESS DOOR & REVISED INLET DUCT		ARRTECH JOB NO.: EJ-120		DRAWN BY: OU	DATE: 1/10/95	JOB NO.: EJ-120	As Built
CHK'D				CHK'D BY: J.B.	DATE: 1/11/95	DRAWING NO.: 2X	By [Signature]
				APPR'D BY:	DATE: / /	REVISION NO.: (1)	

(28'-8")
8738MM



NOTE:
(N.S.) INDICATES NEAR SIDE
(F.S.) INDICATES FAR SIDE

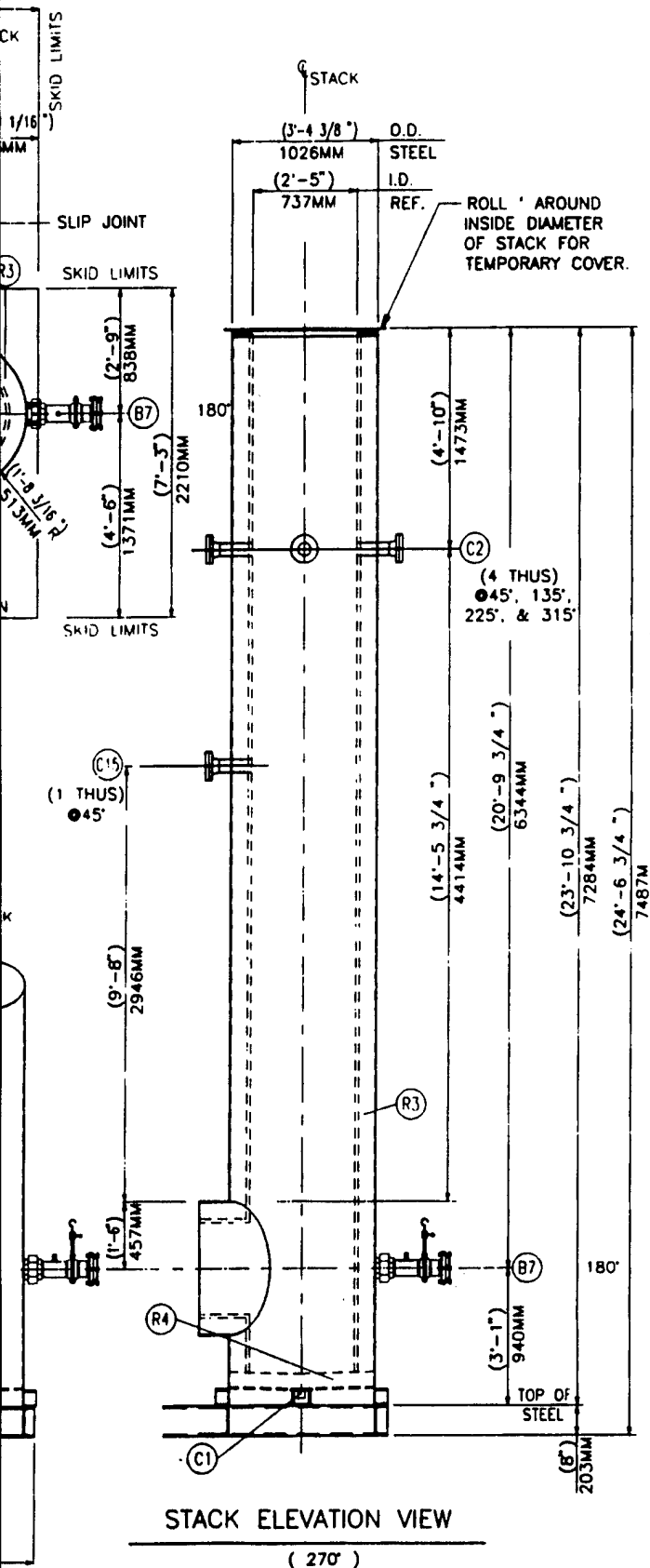
(1) THUS)
●45'



(270)

NOTE:
(N.S.) INDICATES NEAR SIDE
(F.S.) INDICATES FAR SIDE

9					
8					
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4					
3	AH	8/17/96	ap	FIELD	
2	OU	3/10/95	JLB	ADDED	
1	OU	1/10/95	JLB	REV:	
NO.	BY	DATE	CHK'D		



MISCELLANEOUS COMPONENTS

MK	QTY	DESCRIPTION
B1	ONE	MAXON AIRFLOW BURNER - LV5-B-24-120
		W/1 - 12" & 1 - 6" STRAIGHT SECTIONS (SEE DATA SHEETS)
B2	ONE	I.D. FAN - CHICAGO BLOWER - SIZE "13D" (SEE DATA SHEETS)
B3	ONE	MAXON - PREMIXING TUBE - HG SERIES - SIZE 4" (SEE DATA SHEETS)
B4	ONE	F.D. FAN - MAXON FG SERIES - C-1450-12 (SEE DATA SHEETS)
B5	ONE	10 GA. CORBEL (304SS)
B6	ONE	27" BOLTED ACCESS DOOR - AFTER BURNER
B7	2	4" SIGHT PORT - AES-5-53
B8	ONE	3/16" DISTRIBUTION PLATE

MISCELLANEOUS CONNECTIONS

MK	QTY	DESCRIPTION	
C1	ONE	1 1/2" (SCH 20) PIPE (304SS)	STACK FLOOR DRAIN
C2	4	4" - 300# RFWN W/BLIND & 310SS PIPE	EPA SAMPLE PORTS
C3	ONE	1" 3000# CPLG W/PLUG & 310SS PIPE	TW-(145)
C4	ONE	1 1/2" 3000# CPLG W/PLUG & 310SS PIPE	SPARE
C5	ONE	1" 3000# CPLG W/PLUG & 310SS PIPE	TW-(131)
C6	ONE	3/8" 3000# CPLG W/PLUG & 310SS PIPE	PILOT IGNITOR
C7	ONE	1" 3000# CPLG W/PLUG & 310SS PIPE	UV SCANNER
C8	ONE	1 1/2" NPT ON PREMIXER	FUEL GAS
C9	ONE	1/2" 3000# CPLG W/PLUG & 310SS PIPE	PSH 153
C10	ONE	1/2" 3000# CPLG W/PLUG & 310SS PIPE	PSL 155
C11	ONE	1/2" 3000# CPLG W/PLUG & 310SS PIPE	PT 151
C12	ONE	1 1/2" 300# RFWN (BY SENSOR SUPPLIER)	
C13	ONE	CONNECTION INCLUDED IN CUSTOMER PIPING	PT 158
C14A	ONE	1/2" 3000# CPLG W/PLUG & 310SS PIPE	
C14B	ONE	1/2" 3000# CPLG W/PLUG & 310SS PIPE	
C15	ONE	4" - 300# RFWN W/BLIND & 310SS PIPE	CEM SAMPLE PORT
C16	ONE	4" x 3" 3000# REDUCING CPLG	PREMIXER
C17	ONE	3/8" 3000# CPLG	PILOT GAS

REFRACTORIES

W/B	AREA	MATERIAL	INSTALLED
R1	INLET DUCT	4" - 6" C.F.B. < 304SS PINS & CLIPS (WET PACK)	SHOP
R2	COMBUSTOR	1" - 8" & 4 1/2" - 6" C.F.B. < 310SS PINS & CLIPS	SHOP
R3	STACK	1" - 8" & 4 1/2" - 6" C.F.B. < 310SS PINS & CLIPS	SHOP
R4	STACK FLOOR	1" - 8" & 4 1/2" - 6" C.F.B. < 310SS PINS & CLIPS	SHOP
RM3	SLIP JOINT	1" - 8" C.F.N.B	FIELD
RM7	BOLTED JOINT	0.065" THK GASKET, "GORE-TEX" OR EQUAL TAPE	SHOP

NOTES:

- SANDBLAST EXTERIOR SURFACE PER SSPC-SP6.
- PAINT EXTERIOR HTR. SURFACES W/(1) COAT (3 - 4) MILS DFT CARBOZINC 11. FINISH W/(2) COATS (4 MILS EACH) DFT "SHERMAN WILLIAMS - ALL WEATHER EPOXY"
- ALL CASING MAT'L A36 W/MINIMUM THK. AS FOLLOWS : COMBUSTOR WALLS : 3/16" THK. STACK : 3/16" THK. DUCT WALLS : 3/16" THK.
- ALL LIFTING LUGS LIFT STRAIGHT UP UNLESS NOTED OTHERWISE.
- SEE BURNER DRAWINGS FOR BURNER INFORMATION.
- SKID FLOOR PLATE - 1/4" GALV. CHK'D PLATE.
- STACK & AIR INLET DUCT SHIPPED SEPARATE

STACK ELEVATION VIEW

(270')

JOB INFORMATION

CUSTOMER: ROY F. WESTON, INC.
P.O. NO.: 43366
JOBSITE: ALPINE, AL.
END USER: U.S. ARMY ENVIRONMENTAL CENTER
SERVICE: AFTER BURNER SYSTEM
ARRTECH JOB NO.: U-120

Arrtech
ENVIRONMENTAL SYSTEMS, INCORPORATED

TULSA
OKLAHOMA

BLOOMINGTON
MINNESOTA

DRAWING TITLE

GENERAL ARRANGEMENT - PLAN & ELEV.

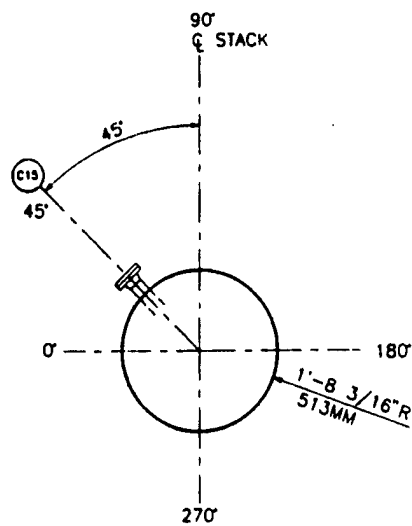
DRAWN BY	OU	DATE	9/25/94	JOB NO.	U-120
CHK'D BY	JLB	DATE	1/11/95	DRAWING NO.	1A
APPR'D BY		DATE		REVISION NO.	3

CADD DWG U120-1A.DGN
CADD DWG U120-1A.DWG

DATE	CHK'D	REVISION DESCRIPTION
1/17/95	AL	FIELD MODIFICATIONS
10/95	JLB	ADDED FUEL TRAIN & BURNER INLET PIPING
10/95	JLB	REVISED PER CUSTOMER COMMENTS

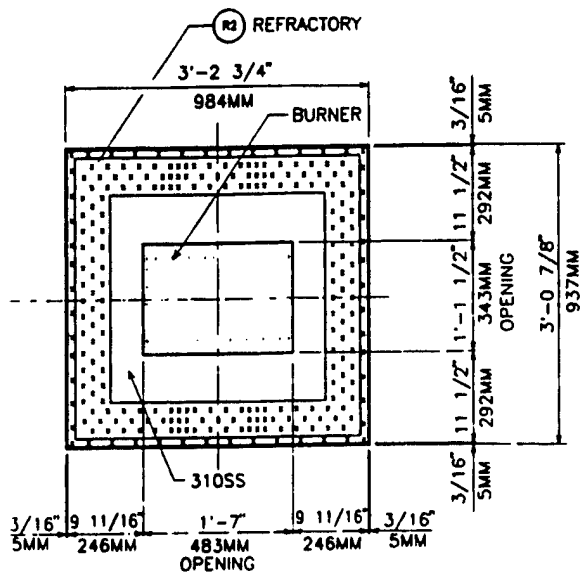


F.D. FAN

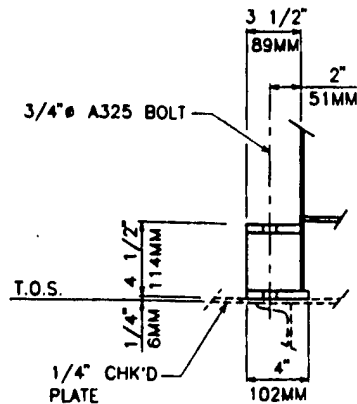


CEM SAMPLE PORT

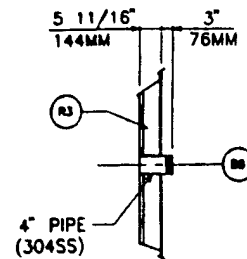
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2	AH	8/17/98	CLP	FIELD
1	OU	3/10/95	JLB	ADDE
NO	BY	DATE	CHK'D	



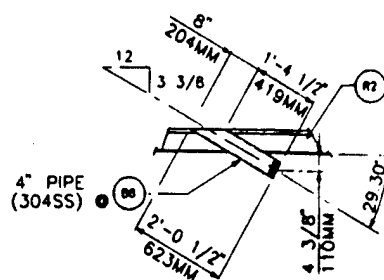
BURNER PROFILE PLATE
SECTION B-B



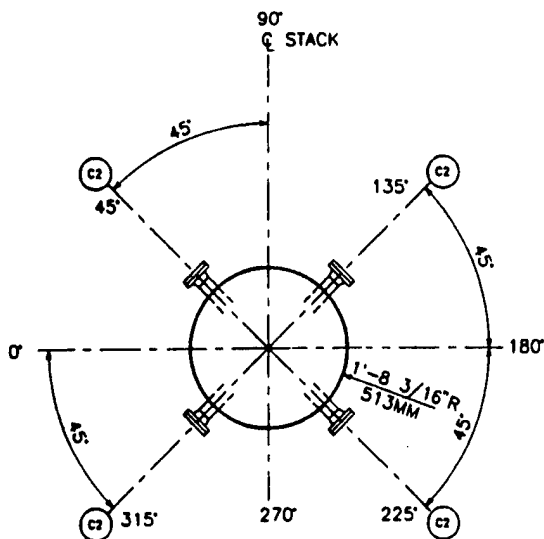
STACK BASE DETAIL



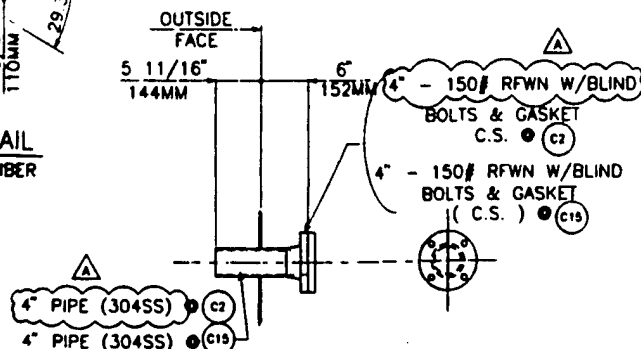
SITE PORT DETAIL
IN STACK



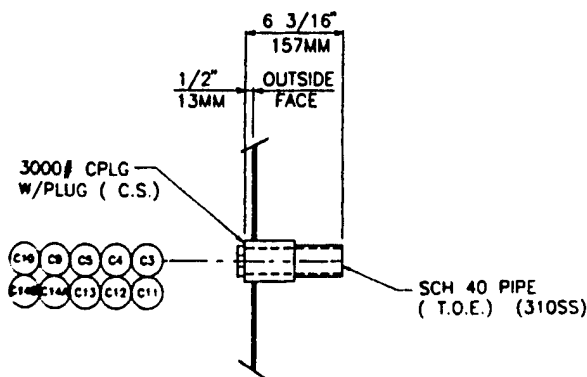
SITE PORT DETAIL
IN COMBUSTION CHAMBER



EPA SAMPLE PORTS

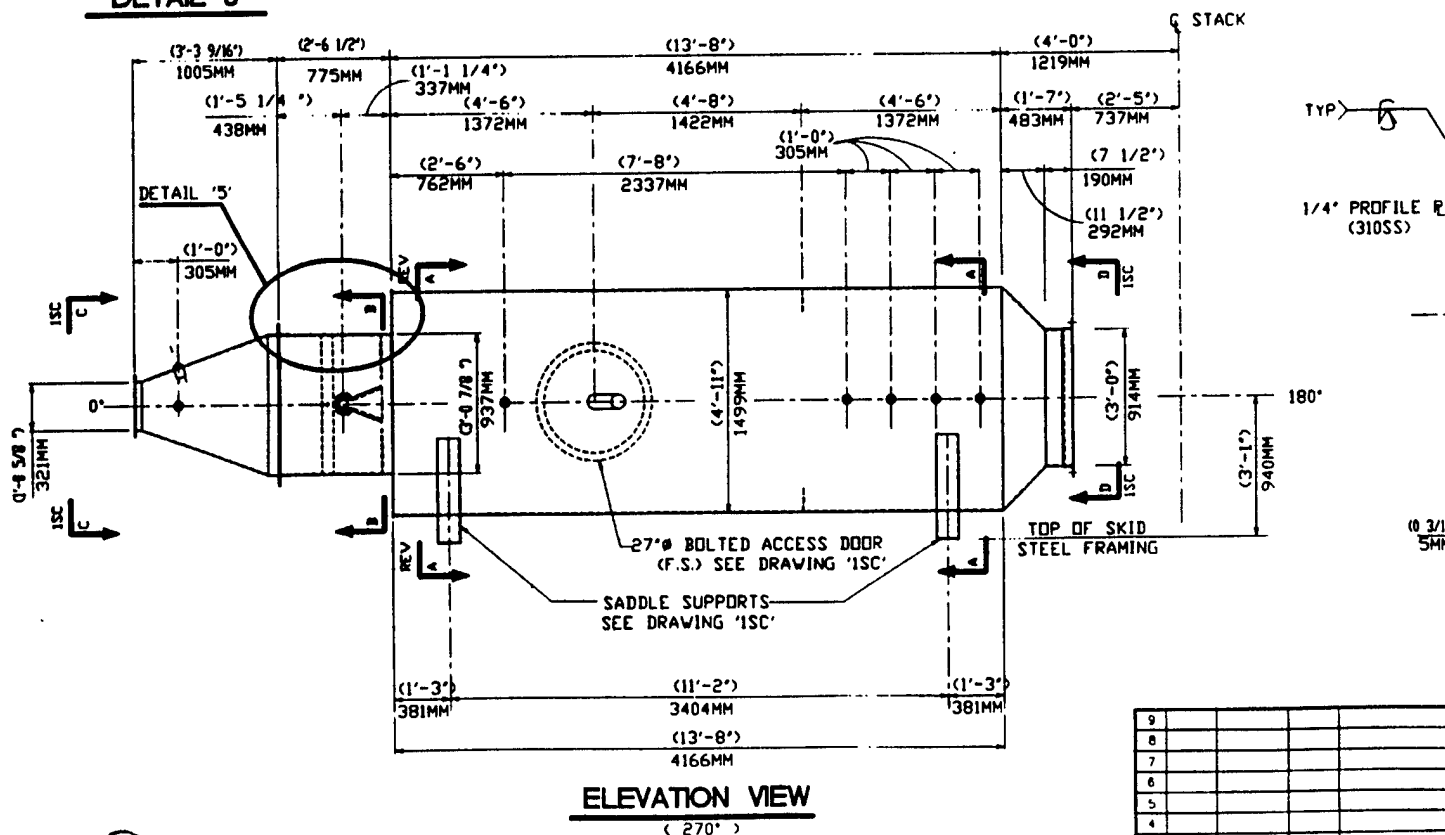
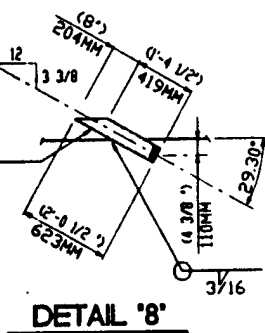
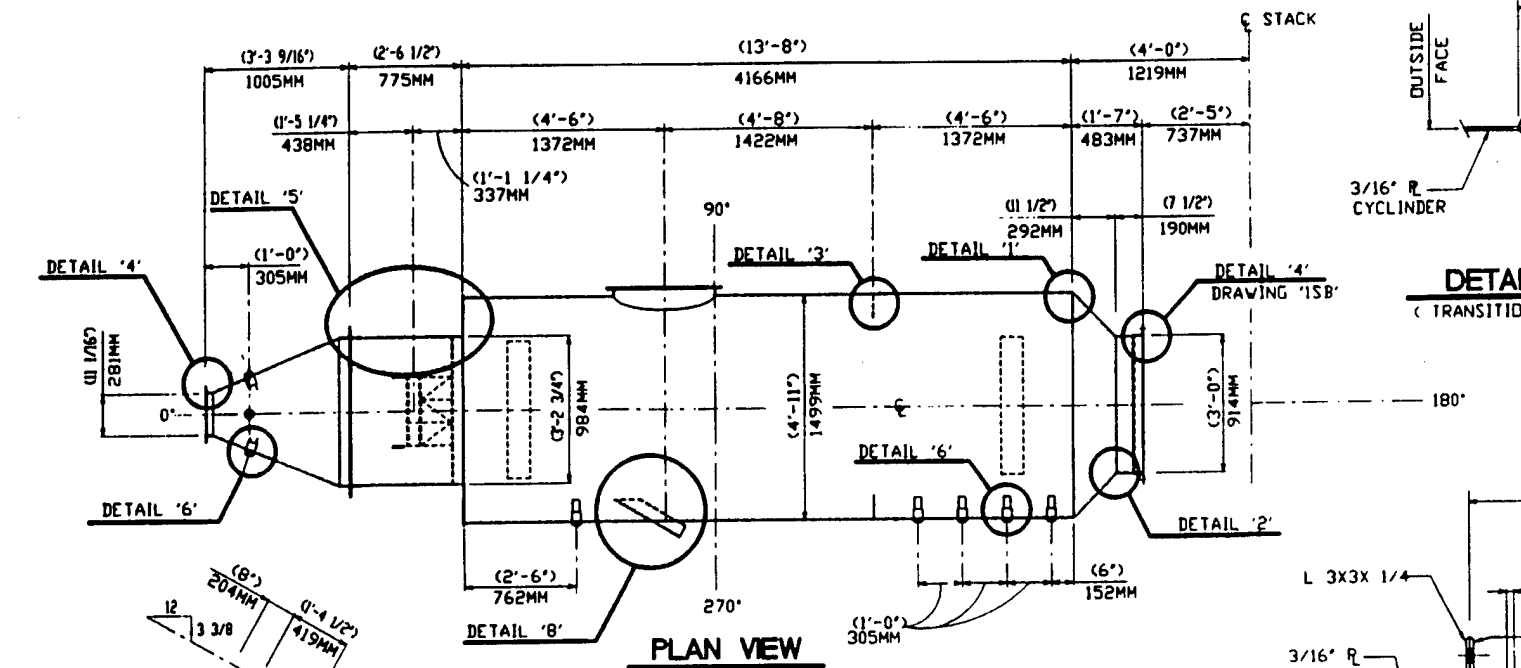


FLANGED CONNECTION DETAIL (TYPICAL)

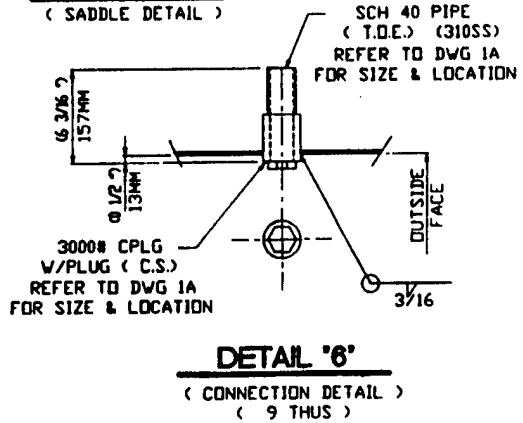
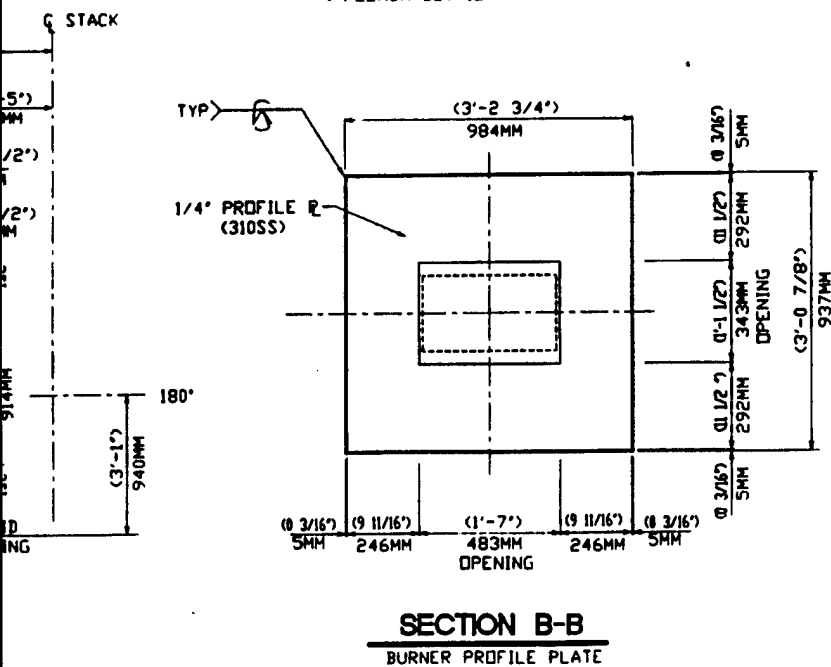
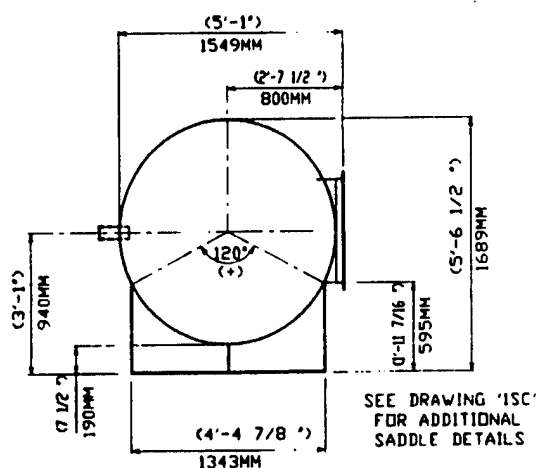
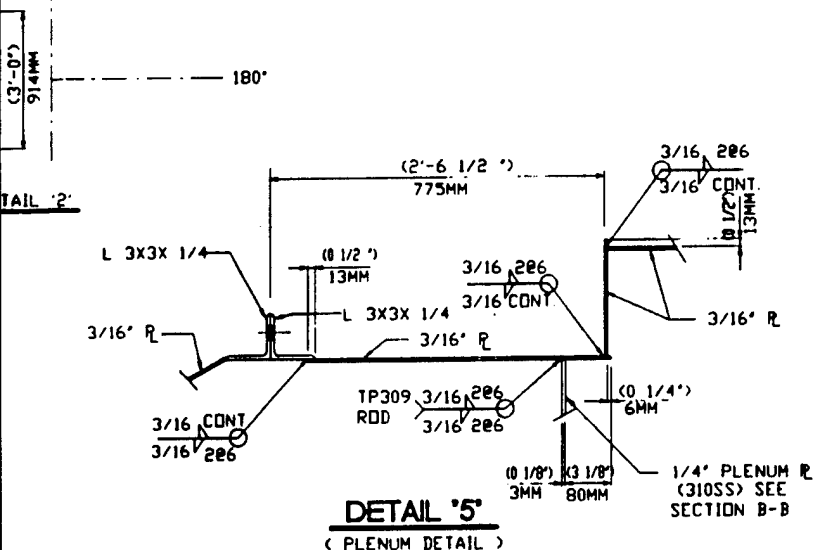
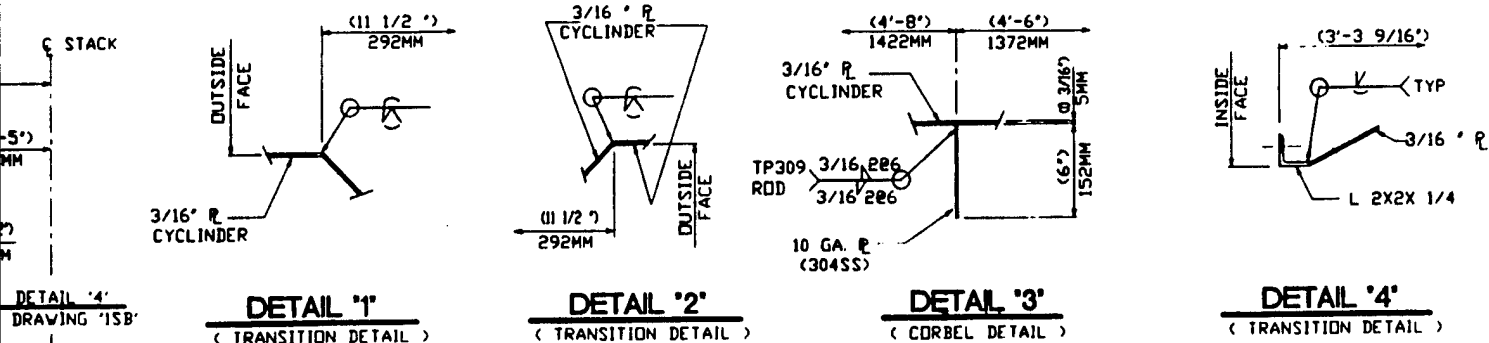


CONNECTION DETAIL (TYPICAL)

JOB INFORMATION		Arritech	
CUSTOMER: ROY F. WESTON, INC.		8508 S. Lewis, Suite 230 Tulsa, OK 74136	
P.O. NO: 43366		ENVIRONMENTAL SYSTEMS, INCORPORATED	
JOBSITE: ALPINE, AL		DRAWING TITLE	
END USER: U.S. ARMY ENVIRONMENTAL CENTER		GENERAL ARRANGEMENTS - SECTIONS	
SERVICE: AFTER BURNER SYSTEM		DRAWN BY: OJ	DATE: 1/10/95
ARRITECH JOB NO: U-120		CHK'D BY: JLB	DATE: 1/11/95
REVISION DESCRIPTION		APPR'D BY:	DATE:
C4P	FIELD MODIFICATIONS		
JLB	ADDED NOTES TO COMM. & DETAILS & REVISED DIMENSION		
CHK'D			



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1	DU	3/10/95	JLB	REVISED PLR
NO	BY	DAL	CHK'D	

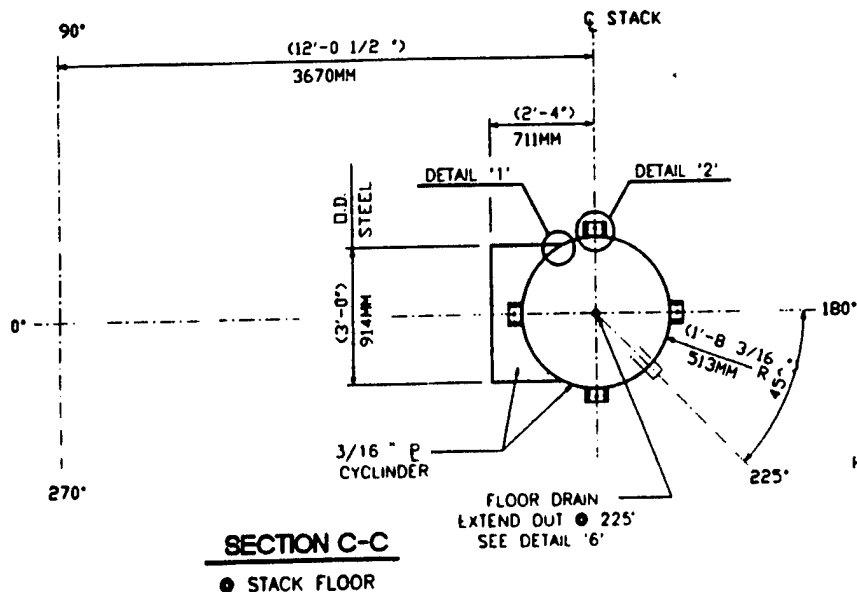


- NOTES:**
1. SANDBLAST EXTERIOR SURFACE PER SSPC-SP6 .
 2. PAINT EXTERIOR HTR. SURFACES (1) COAT (3 - 4) MILS DFT CARBOZINC II. FINISH COAT (2) COATS (4 MILS EACH) DFT 'SHERMAN WILLIAMS - ALL WEATHER EXPOXY'
 3. ALL C. S. MATERIAL SHALL BE A36
 4. ALL LIFTING LUGS LIFT STRAIGHT UP UNLESS NOTED OTHERWISE.
 5. SKID FLOOR PLATE - 1/4" GALV. CHK'D PLATE.

				JOB INFORMATION		Artech	
9				CUSTOMER: RDT F WESTON, INC		6506 S. Lewis, Suite 230	
8				P.O. NO. 43366		Luise, OK 74136	
7				JOB SITE: ALPINE, AL		ENVIRONMENTAL SYSTEMS, INCORPORATED	
6				END USER: U.S. ARMY ENVIRONMENTAL CENTER		DRAWING TITLE: STEEL ARRANGEMENT AFTER BURNER	
5				SERVICE: AFTER BURNER SYSTEM		DRAWN BY: DJ	DATE: 12-14-94
4				ARKTECH JOB NO. 1J-120		CHK'D BY: JLB	DATE: 1/12/95
3						APPR'D BY:	DATE: / /
2							
1	DJ	3/10/95	JLB	REVISED PER CUSTOMER COMMENTS			
NO	BY	DATE	CHK'D	REVISION DESCRIPTION			

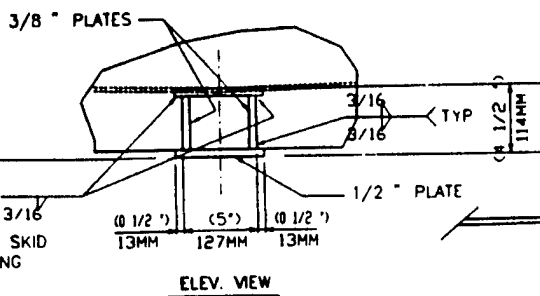
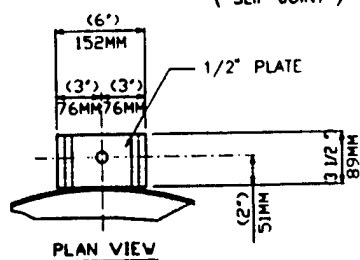
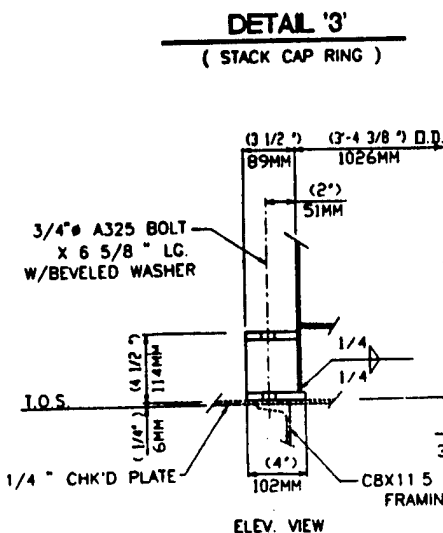
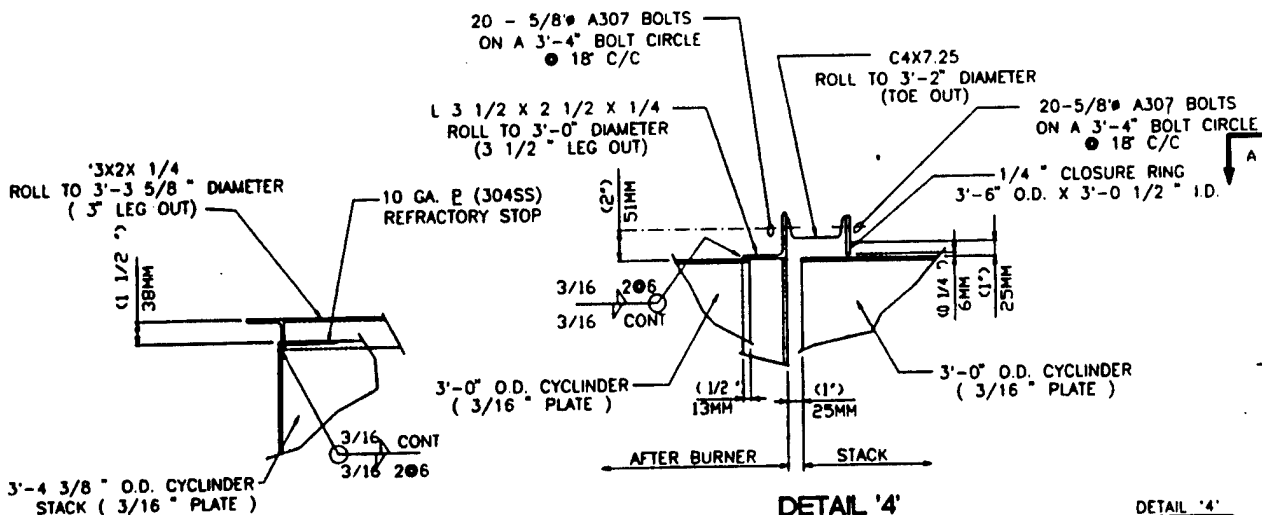
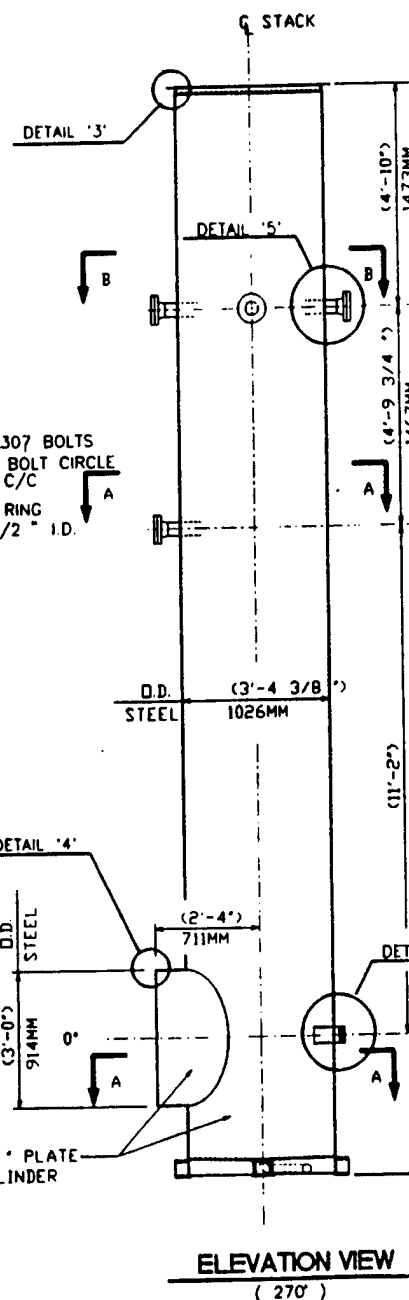
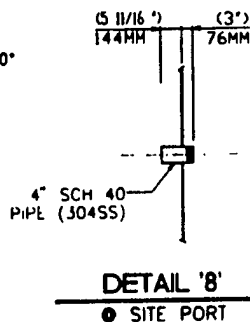
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CADD DWG: 1J1201SADW
CADD DWG: 1J1201ADW



NOTES:

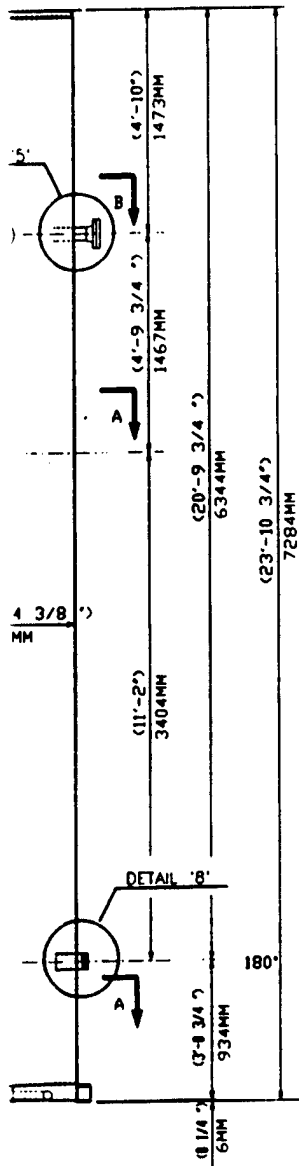
1. SANDBLAST EXTERIOR SURFACE PER SSPC-SP6.
2. PAINT EXTERIOR HTR. SURFACES WITH (1) COAT
(3 - 4) MILS DFT CARBOZINC 11.
FINISH COAT WITH (2) COATS (4 MILS EACH) DFT
"SHERMAN WILLIAMS - ALL WEATHER EPOXY".
3. ALL C. S. MATERIAL SHALL BE A36
4. ALL LIFTING LUGS LIFT STRAIGHT UP UNLESS NOTED OTHERWISE.
5. SKID FLOOR PLATE - 1/4" GALV. CHK'D PLATE.



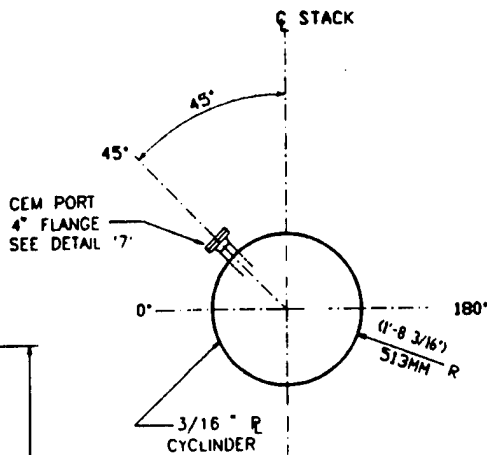
NO	BY	DATE	CHK'D	REMOVED BOLTS
1	DJ	3/10/95	LB	REMOVED BOLTS
2	AH	6/11/96	W	FIELD MODIFICA
3				
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6				
7				
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HERWISE.

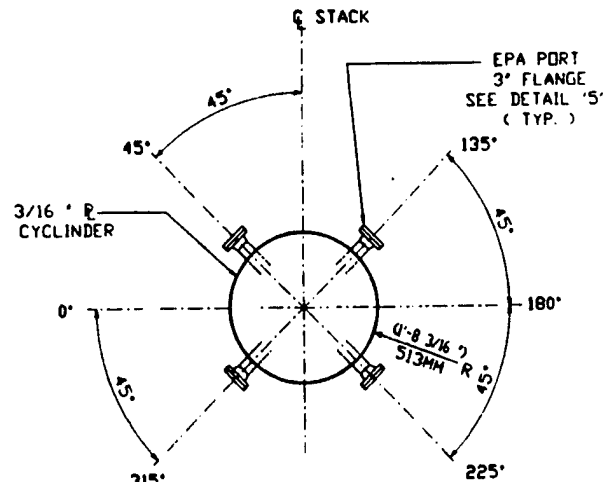
STACK



SECTION VIEW
(270°)

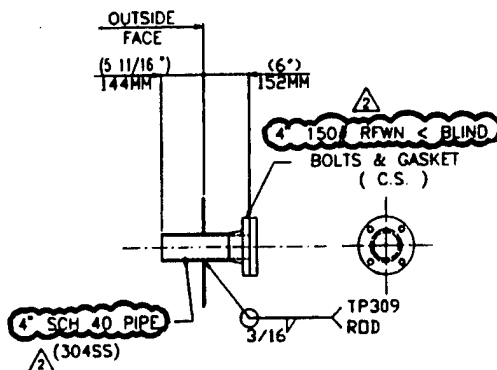


SECTION A-A
CEM SAMPLE PORT

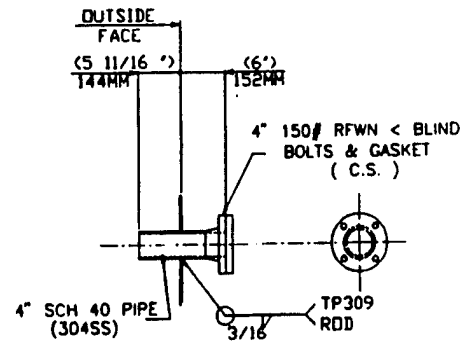


SECTION B-B
EPA SAMPLE PORTS

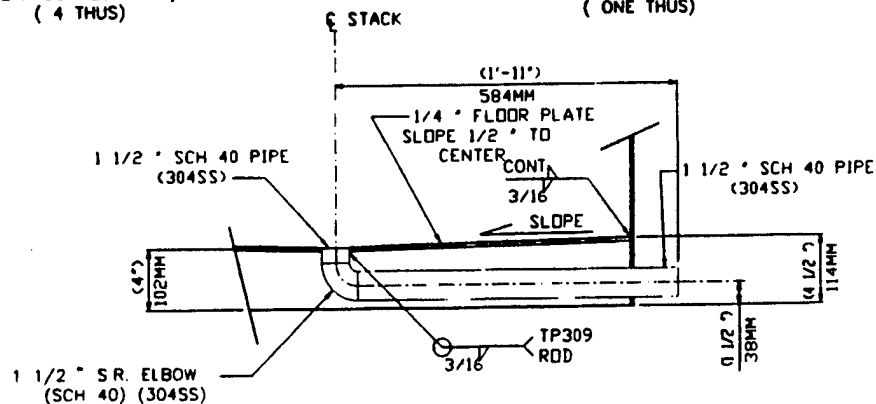
SAMPLE PORTS PLAN VIEW



DETAIL '5'
(EPA CONNECTIONS)
(4 THUS)



DETAIL '7'
(CEM CONNECTION)
(ONE THUS)

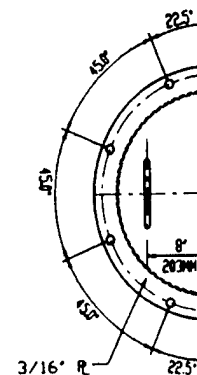


DETAIL '6'
(STACK FLOOR DRAIN)
(ONE THUS)

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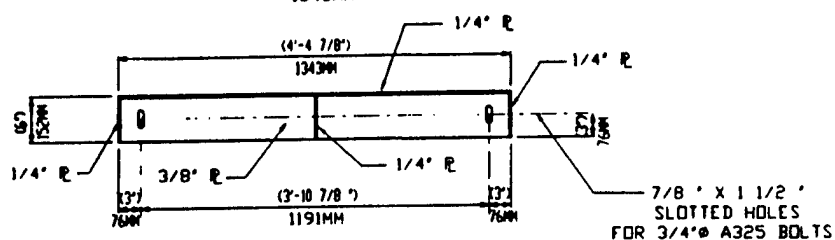
CADD DWG. U12015B DGN
CADD DWG. U1205B DGN

(2)

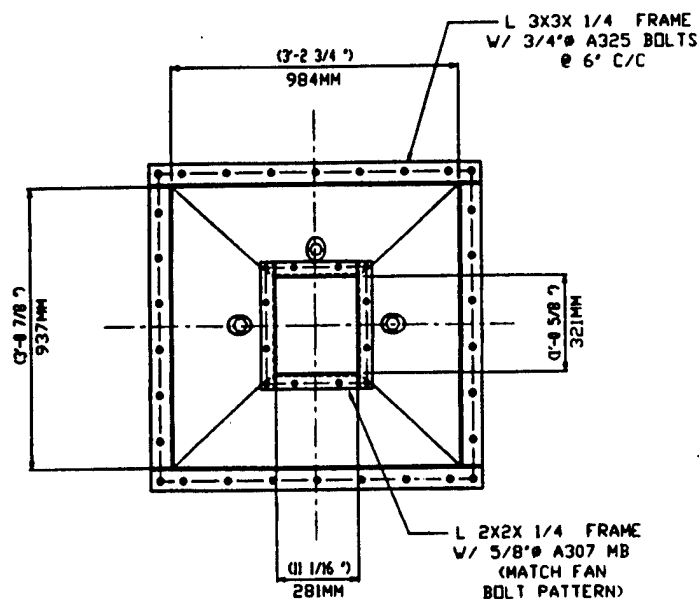
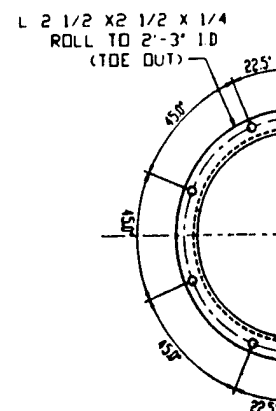


27" BOLTED ACCESS
CROSS-SECTION

27



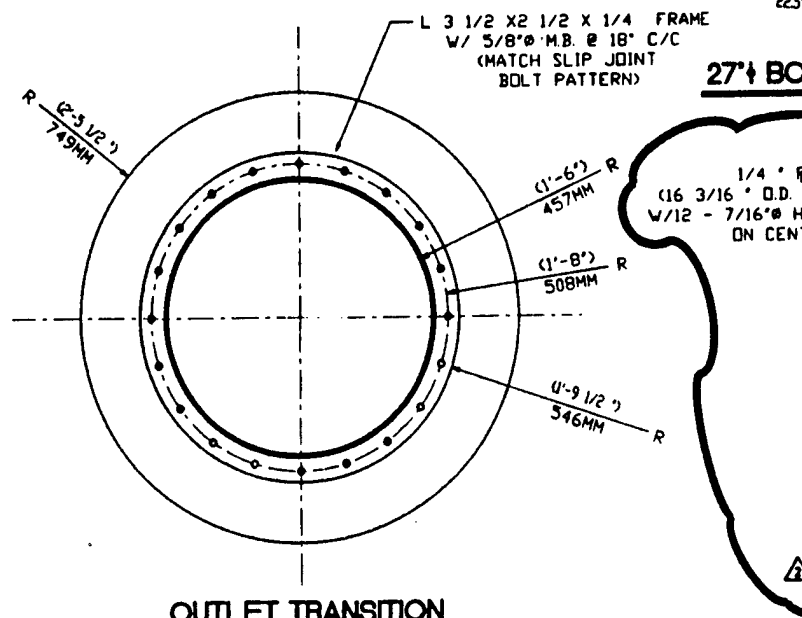
SADDLE DETAILS



INLET TRANSITION

SECTION C-C

FROM DWG. 1SA



OUTLET TRANSITION

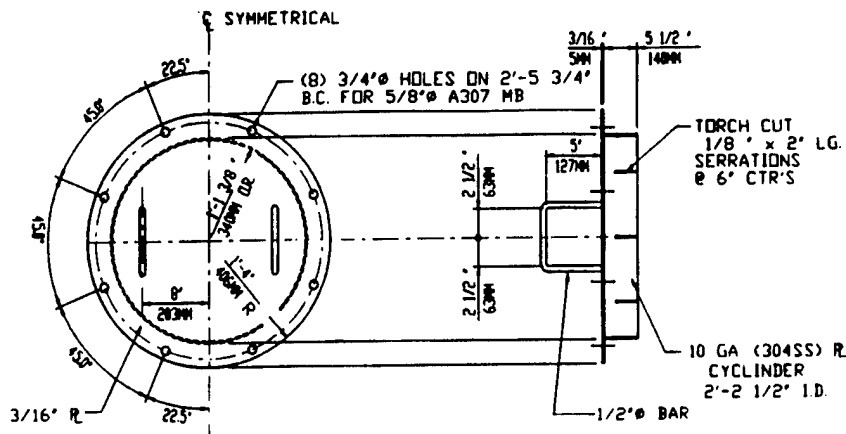
SECTION D-D

FROM DWG. ISA

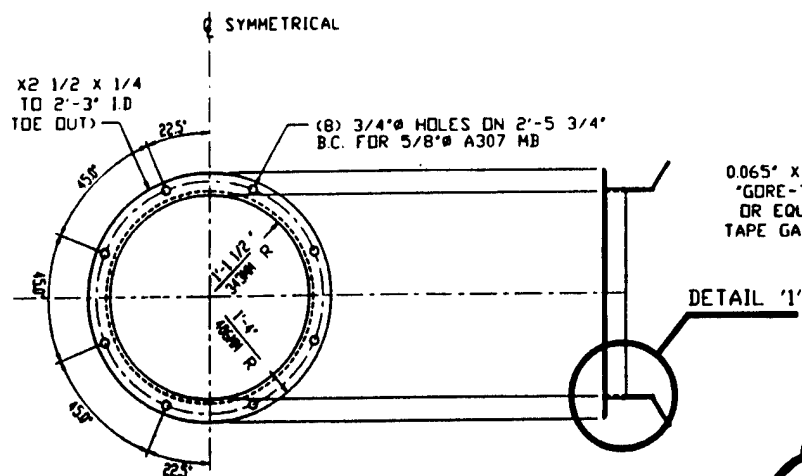
NOTES:

1. SANDBLAST EXTERIOR SURFACE PER SSPC-SP6.
2. PAINT EXTERIOR HTR. SURFACES W/ (1) COAT
(3 - 4) MILS DFT CARBOZINC II.
FINISH COAT W/ (2) COATS (4 MILS EACH) DFT
"SHERMAN WILLIAMS - ALL WEATHER EXPOXY".
3. ALL C. S. MATERIAL SHALL BE A36
4. ALL LIFTING LUGS LIFT STRAIGHT UP UNLESS NOTED OTHERWISE.
5. SKID FLOOR PLATE - 1/4" GALV. CHK'D PLATE.

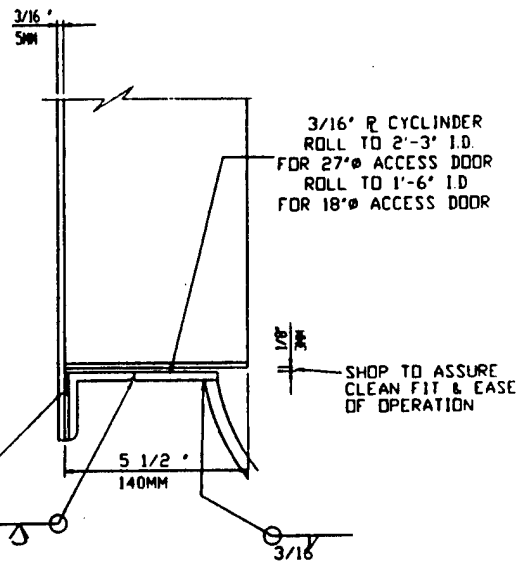
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1	RU	7/10/95	REV	REVISED 'B'
NO	BY	DATE	CHK'D	



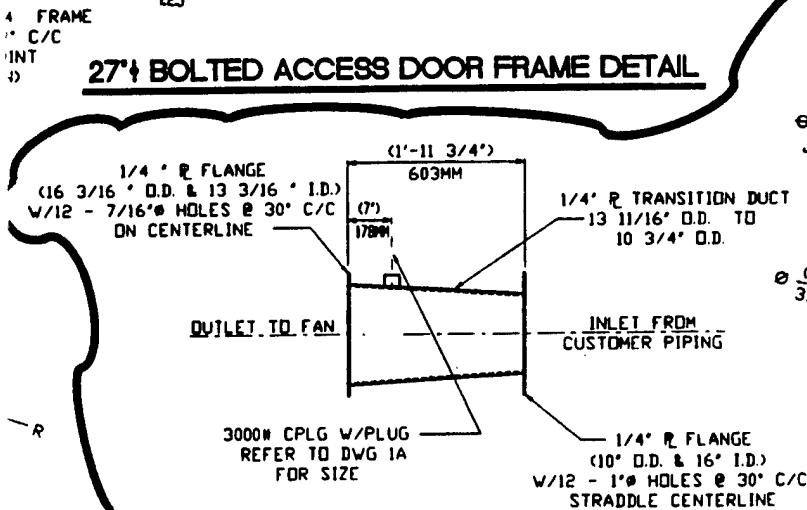
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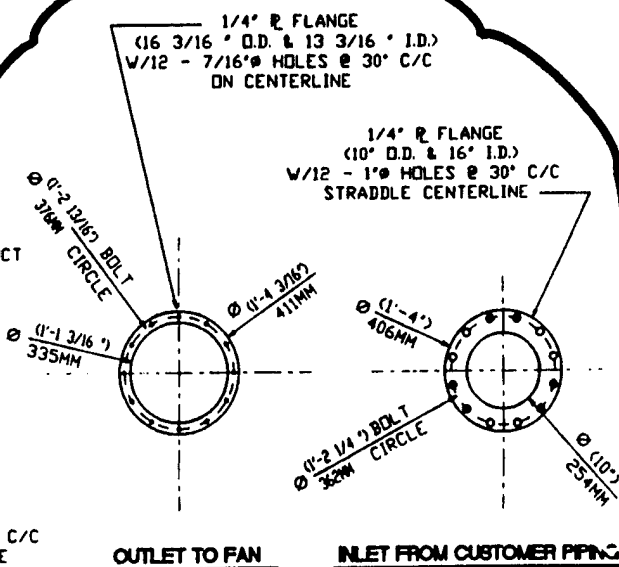
27\"/>



DETAIL 'I'
DOOR LINING



INLET TRANSITION DUCT DETAIL



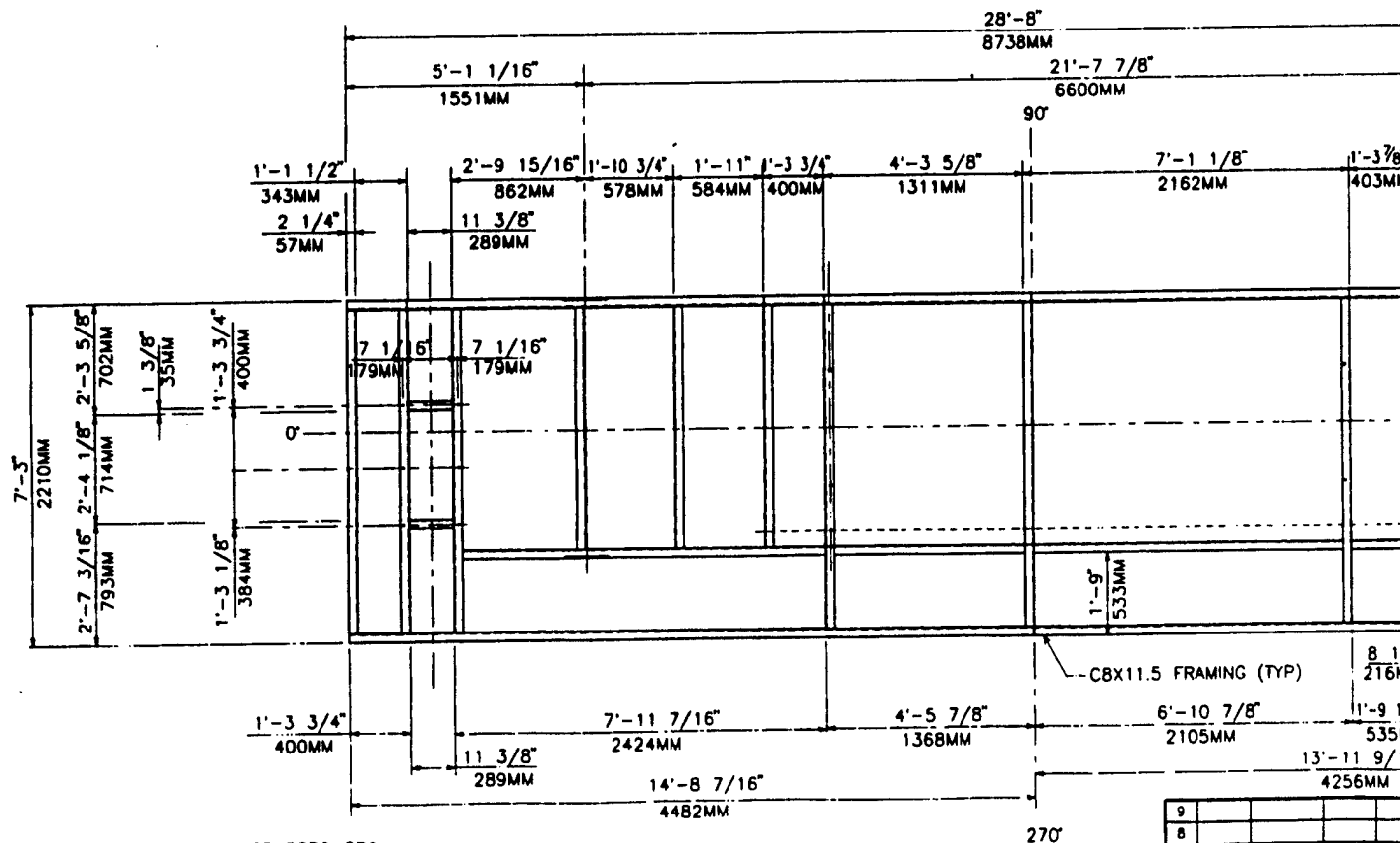
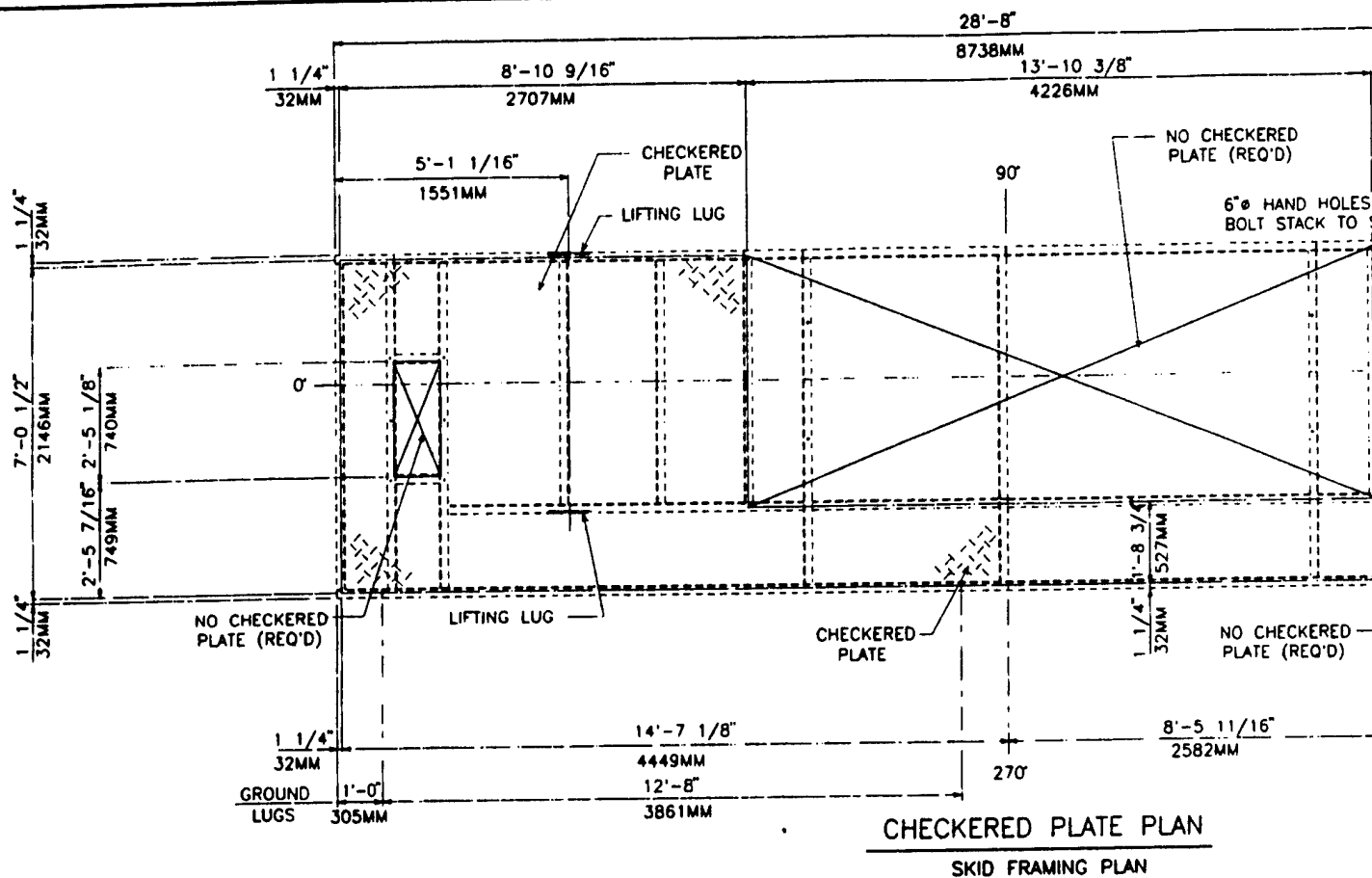
INLET TRANSITION DUCT FLANGES

		JOB INFORMATION		<div><div>Amtech</div><div>ENVIRONMENTAL SYSTEMS, INCORPORATED</div><div>6506 S Lewis, Suite 230 Tulsa, OK 74136</div></div>	
		CUSTOMER RDT F WESTON, INC			
		P.O. NO. 43366			
		JOBSITE ALPINE, AL			
		END USER US ARMY ENVIRONMENTAL CENTER		DRAWING TITLE	
		SERVICE AFTER BURNER SYSTEM		STEEL ARRANGEMENT - DETAILS	
JLB REVISED INLET DUCT SIZE & FLANGES		AMTECH JOB NO. 1J-120		DRAWN BY DU	DATE 12/1/94
JLB REMOVED 18" ACCESS DOOR & ADDED INLET DUCT				CHK'D BY JRB	DATE 1/2/95
REVISION DESCRIPTION				APPR'D BY	DATE / /
				JOB NO. 1J-120	DRAWING NO. 15C
				REVISION NO. 2	

Amtech
ENVIRONMENTAL SYSTEMS, INCORPORATED

6506 S. Lewis, Suite 230
Tulsa, OK 74136

CADD DWG: 1J1201SC.DWG
CADD DWG: 1J1202SC.DWG

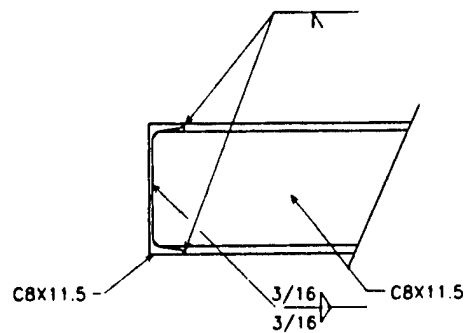
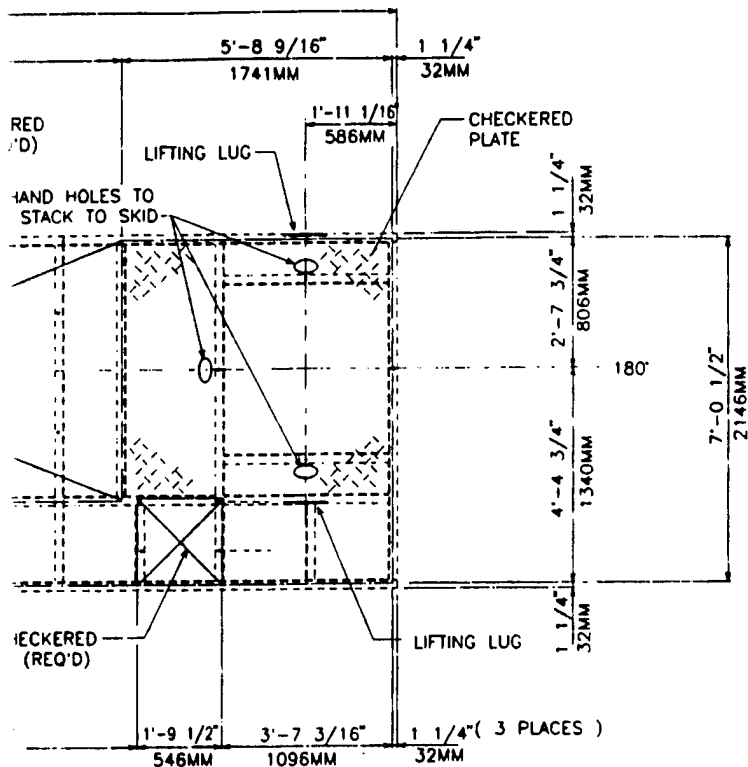


NOTES:

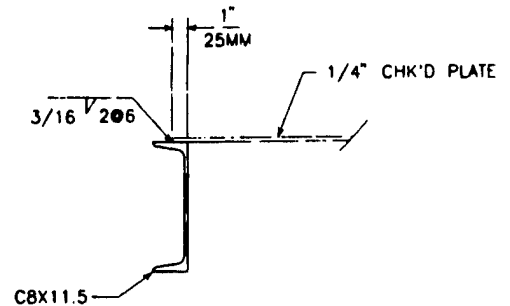
1. SANDBLAST EXTERIOR SURFACE PER SSPC-SP6 .
2. PAINT EXTERIOR HTR. SURFACES W/(1) COAT
(3 - 4) MILS DFT CARBOZINC 11.
FINISH COAT W/(2) COATS (4 MILS EACH) DFT
"SHERMAN WILLIAMS - ALL WEATHER EXPOXY".
3. ALL C. S. MATERIAL SHALL BE A36
4. ALL LIFTING LUGS LIFT STRAIGHT UP UNLESS NOTED OTHERWISE.
5. SKID FLOOR PLATE - 1/4 " GALV. CHK'D PLATE.

SKID STEEL PLAN SKID FRAMING PLAN

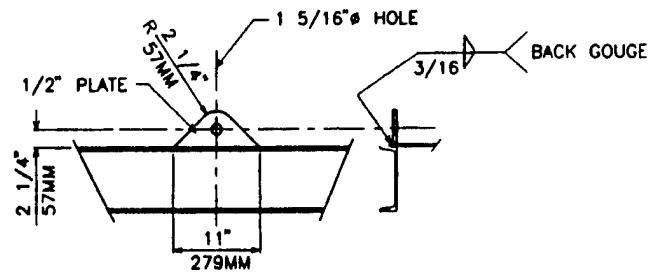
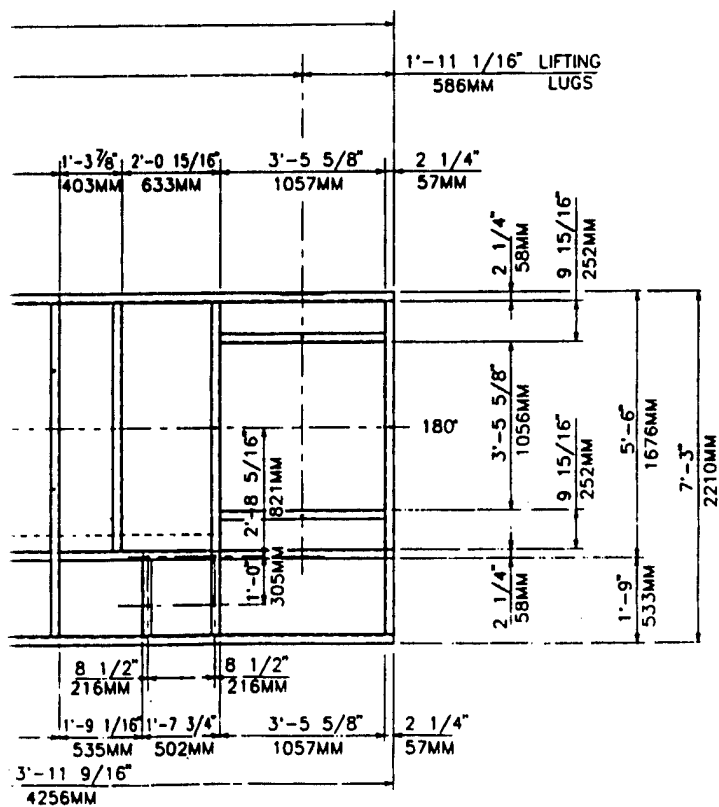
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NO.	BY	DATE	CHK'D		



DETAIL '1'

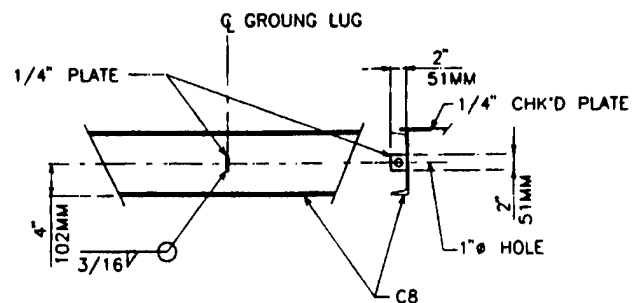


DETAIL '2'



LIFTING LUG

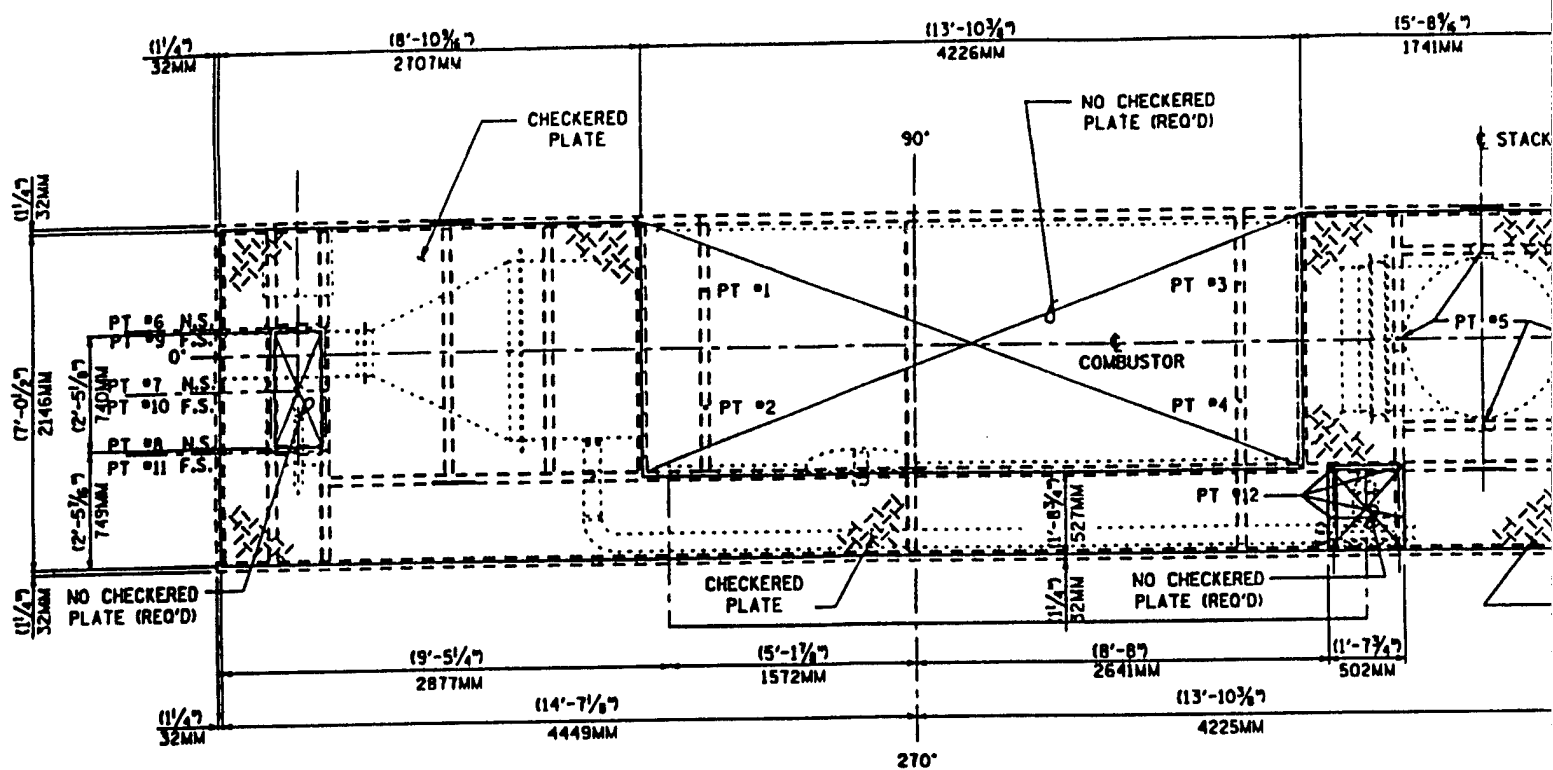
(4 THUS)



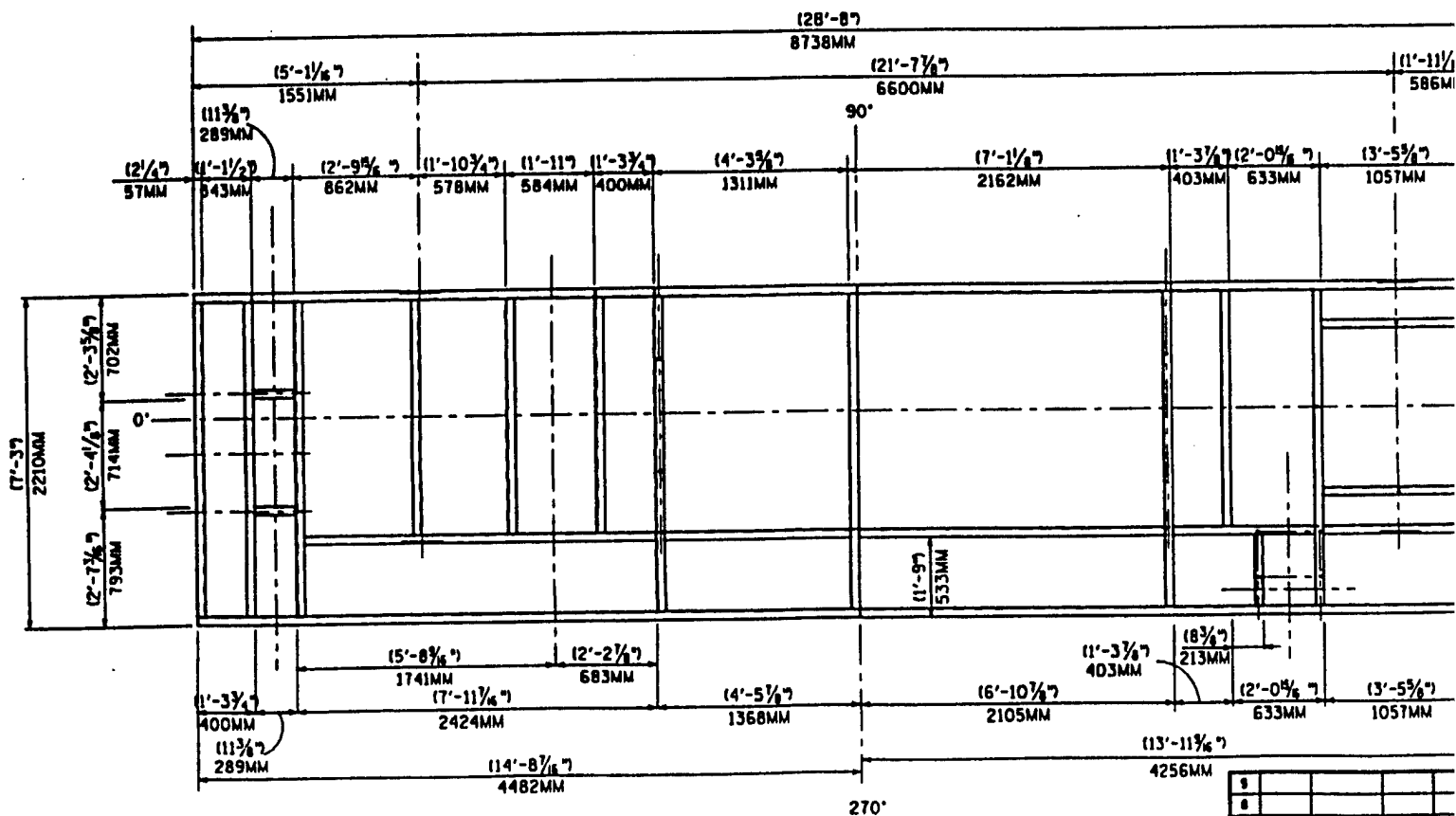
GROUND LUGS

(2 THUS)

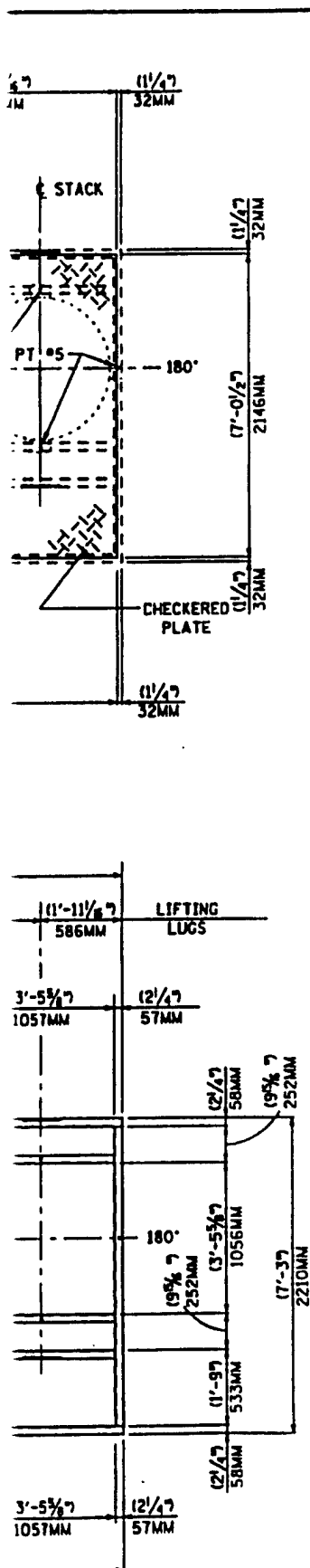
		JOB INFORMATION		Arrlech		
		CUSTOMER: ROY F. WESTON, INC.		6506 S. Lewis, Suite 230		
		P.O. NO.: 43366		Tulsa, OK 74136		
		JOBSITE: ALPINE, AL.		ENVIRONMENTAL SYSTEMS, INCORPORATED		
		END USER: U.S. ARMY ENVIRONMENTAL CENTER		DRAWING TITLE		
		SERVICE: AFTER BURNER SYSTEM		STEEL ARRANGEMENT - SKID & DETAILS		
		ARRTECH JOB NO.: U-120		DRAWN BY: OU	DATE: 12/14/94	JOB NO: U-120
				CHK'D BY: JLB	DATE: 1/12/95	DRAWING NO: 1SD
				APPR'D BY:	DATE:	REVISION NO: 1
3	JLB	REVISED SKID & ADDED GROUND LUGS				
	CHK'D	REVISION DESCRIPTION				



NOTE:
N.S.J INDICATES NEAR SIDE
F.S.J INDICATES FAR SIDE



9				
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7				
6				
5				
4				
3				
2	OU	3/10/95	J.B	R
1	OU	1/12/95	J.B	R
NO.	BY	DATE	CHK'D	



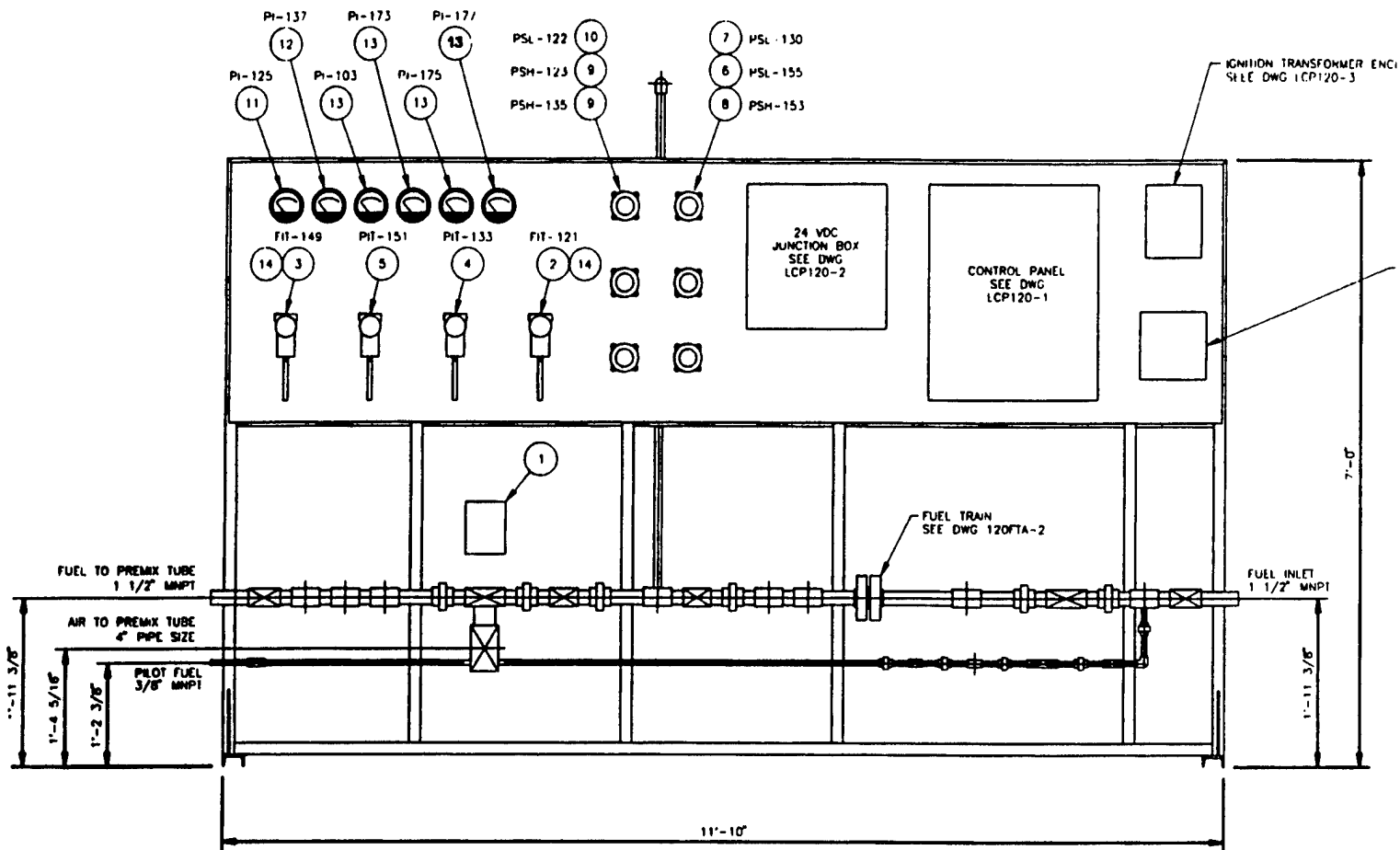
FOUNDATION LOADS										
	DEAD LOAD	WIND (0° - 180°)			WIND (190°-270°)			EARTHQUAKE (ALL)		
AFTER BURNER		SHEAR	OTM	P _v	SHEAR	OTM	P _v	SHEAR	OTM	P _v
TOTAL	5,500	1,194	6,567		284	1,930		1,205	6,628	
FIXED BEARING	3,582	712	3,916	(+) 1,003	142	965	(+) 87	785	4,318	(+) 387
MAXIMUM = DL + P _v		PT #1, #2	2,794		PT #1, #2	1,780		PT #1, #2		2,178
MINIMUM = 90%DL - P _v		PT #1, #2	609		PT #1, #2	1,519		PT #1, #2		1,225
SLIDE BEARING	1,918	482	2,651	(+) 679	142	965	(+) 87	120	2,310	(+) 207
MAXIMUM = DL + P _v		PT #3, #4	1,638		PT #3, #4	1,057		PT #3, #4		1,166
MINIMUM = 90%DL - P _v		PT #3, #4	184		PT #3, #4	869		PT #3, #4		656
STACK										
TOTAL	4,352	1,356	16,161		1,356	16,161		954	15,198	
PER BOLT	1,088	339		(+) 4,370	339		(+) 4,370	477		(+) 4,110
MAXIMUM = DL + P _v		PT #5	6,458		PT #5	5,458		PT #5		5,198
MINIMUM = 90%DL - P _v		PT #5	-3,391		PT #5	-3,391		PT #5		-3,131
FANS										
ID FAN	360	152	310		60	120	(+) 70	79	237	(+) 139
PER BOLT	60	25		(+) 59	10		(+) 18	13		(+) 70
MAXIMUM = DL + P _v		PT #6, #8, #9, #11	119		PT #7, #10	130		PT #6, #8, #9, #11		130
MINIMUM = 90%DL - P _v		PT #6, #8, #9, #11	-5		PT #7, #10	-16		PT #6, #8, #9, #11		-16
		PT #7, #10	60		PT #6, #8, #9, #11	78		PT #7, #10		199
FD FAN	300	230	345		115	173		66	132	
PER BOLT	75	58		(+) 173	29		(+) 60	16		66
MAXIMUM = DL + P _v		PT #12	248		PT #12	135		PT #12		141
MINIMUM = 90%DL - P _v		PT #12	-106		PT #12	7		PT #12		1
SKID										
TOTAL	3,300									

ALL LOADS IN POUNDS (LBS) EXCEPT OTM FOOT-POUNDS (FT-LBS)
 CODE: ANSI A58.1, 1982
 WIND VELOCITY = 90 MPH
 IMPORTANCE FACTOR = 1.07
 EARTHQUAKE ZONE = 4
 IMPORTANCE FACTOR = 1.25

(-) INDICATES UPLIFT
 OTM = OVERTURNING MOMENT
 P_v = VERTICAL LOAD DUE TO OTM

- NOTES:
- SANDBLAST EXTERIOR SURFACE PER SSPC-SP6.
 - PAINT EXTERIOR HTR. SURFACES W/ (1) COAT (3 - 4) MILS DFT CARBOZINC 11. FINISH COAT W/ (2) COATS (4 MILS EACH) DFT 'SHERMAN WILLIAMS - ALL WEATHER EXPOXY'.
 - ALL C. S. MATERIAL SHALL BE A36
 - ALL LIFTING LUGS LIFT STRAIGHT UP UNLESS NOTED OTHERWISE.
 - SKID FLOOR PLATE - 1/4" GALV. CHK'D PLATE.

JOB INFORMATION		TULSA DELTAHWA ENVIRONMENTAL SYSTEMS, INCORPORATED	
CUSTOMER: ROY F. WESTON, INC.		BLOOMINGTON MINNESOTA	
P.O. NO. 143346		DRAWING TITLE	
JOB SITE: ALPINE, AL.		FOUNDATION PLAN	
END USER: U.S. ARMY ENVIRONMENTAL CENTER		DRAWN BY DU	
SERVICE: AFTER BURNER SYSTEM		DATE 10/13/94	
ARRTECH JOB NO. 1J-120		JOB NO. 1J-120 As Built	
REVISION DESCRIPTION		CHK'D BY J.B.	
J.B. REVISED WIND VELOCITY & ADDED EARTHQUAKE LOADING		DATE 1/12/95	
J.B. REVISED STACK LOADING		DRAWING NO. 2A	
APP'R'D BY		REVISION NO. 2	
		DATE / /	



FRONT ELEVATION

GENERAL NOTES

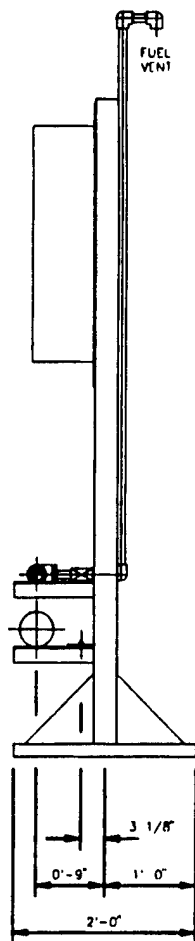
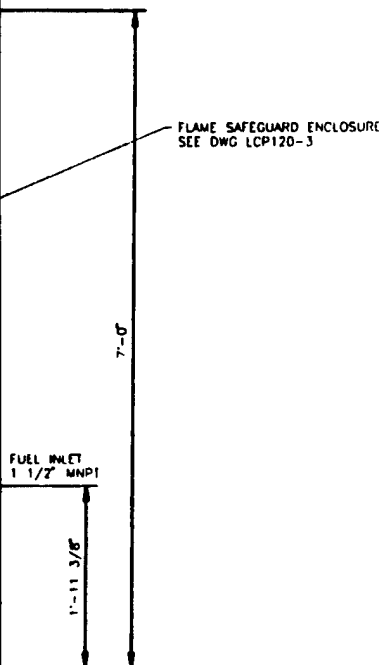
- 1 FUEL RACK FINISH: GREY ENAMEL
- 2 TUBING SHALL BE COPPER WITH BRASS FITTINGS
- 3 CONDUIT SHALL BE RIGID GALVANIZED STEEL (3/4" MINIMUM). INSTALL FLEXIBLE CONDUIT AT EACH DEVICE AS REQUIRED FOR MAINTENANCE PURPOSES (18" MINIMUM). CONDUIT FITTINGS SHALL BE CROUSE-HINDS FORM 7 OR EQUAL. INSTALL CONDUIT SEALS AS REQUIRED FOR CLASS 1, DIVISION 2, GROUP D AREA
- 4 ITEMS 15 & 16 SHALL BE INSTALLED IN PRESSURE TAPS ON FF-121

REFERENCE DRAWINGS

NUMBER	T.T.L.
PI120	PIPING & INSTRUMENT DIAGRAM
LCP120	LOCAL CONTROL PANEL ASSEMBLY
FR120	FUEL RACK FABRICATION

11

MINION TRANSFORMER ENCLOSURE
SEE DWG LCP120-3



SIDE ELEVATION

BILL OF MATERIAL

ITEM	QTY	DESCRIPTION
1	1	MOTOR, FIRING RATE CONTROL, SEE ArrTech SPECIFICATION 120-5
2	1	TRANSMITTER, DP, SEE ArrTech SPECIFICATION 120-7
3	1	TRANSMITTER, DP, SEE ArrTech SPECIFICATION 120-16
4	1	TRANSMITTER, PRESSURE, SEE ArrTech SPECIFICATION 120-8
5	1	TRANSMITTER, PRESSURE, SEE ArrTech SPECIFICATION 120-11
6	1	SWITCH, PRESSURE, SEE ArrTech SPECIFICATION 120-10
7	1	SWITCH, PRESSURE, SEE ArrTech SPECIFICATION 120-12
8	1	SWITCH, PRESSURE, SEE ArrTech SPECIFICATION 120-15
9	2	SWITCH, PRESSURE, SEE ArrTech SPECIFICATION 120-17
10	1	SWITCH, PRESSURE, SEE ArrTech SPECIFICATION 120-18
11	1	GAUGE, PRESSURE, DWYER 2210 (0-10 PSI)
12	1	GAUGE, PRESSURE, DWYER 2205 (0-5 PSI)
13	4	GAUGE, PRESSURE, DWYER 2030 (0-30\"/>

3

REVISIONS						ENGINEERING RECORD			
NO	DESCRIPTION	BY	DATE	CHKD	DATE	SCALE	DATE	CHKD	DATE
0	FOR CONSTRUCTION	JW	3-6-95			1" = 1'-0"			
1	REVISED AIR & PILOT PIPE ELEVATION	JW	4-2-95						
2	RECORD	JW	7-4-95						
3	FIELD MODIFICATIONS	CLP	8/1/96						

ArrTech
ENVIRONMENTAL SYSTEMS

PREPARED FOR
ROY F. WESTON, INC

CLIENT JOB

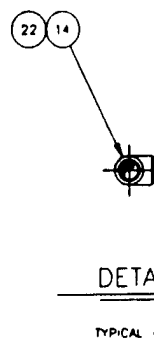
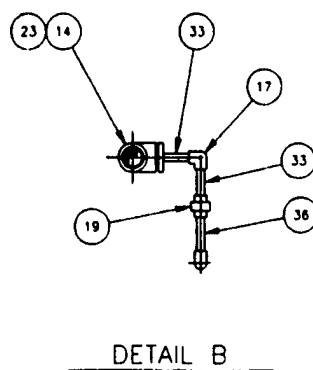
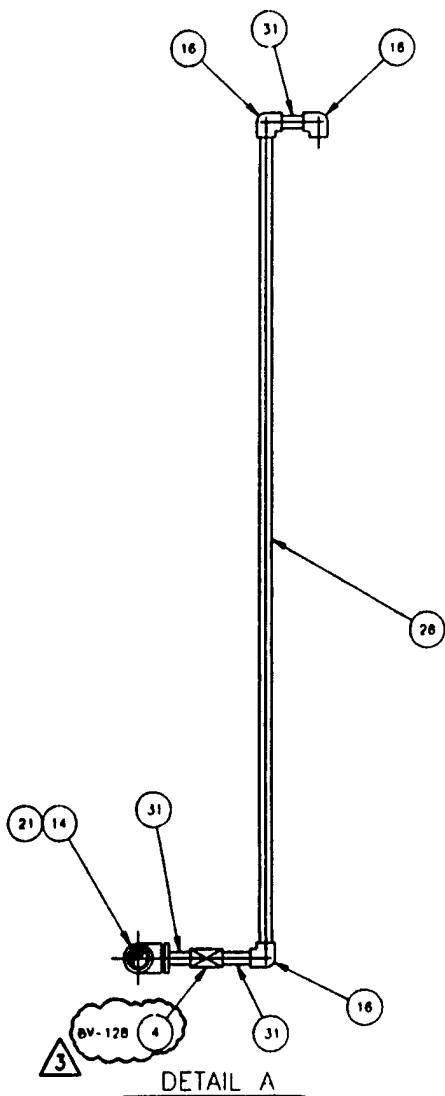
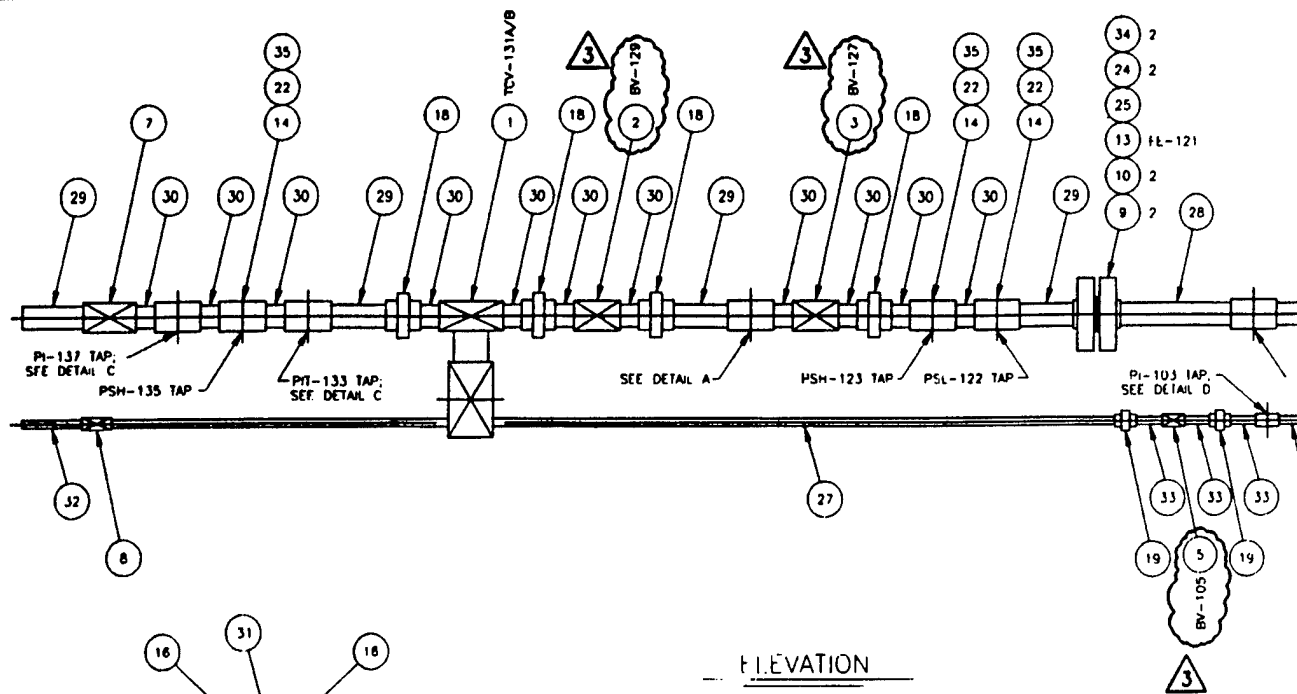
**FUEL TRAIN ASSEMBLY
AFTERBURNER**

APPROVED

DWG. #: FTA120-1

REVISION 3

2



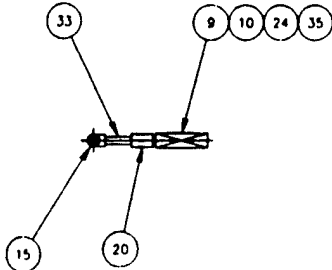
GENERAL NOTES

- 1 FINISH: ALL PIPE, NIPPLES AND PIPE FITTINGS SHALL BE PAINTED WITH GREY ENAMEL.
- 2 TWO (2) EACH OF IILMS 9, 10 & 24 ARE MOUNTED ON PREMIX AIR DUCT

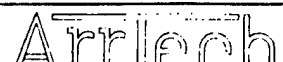
REFERENCE DRAWINGS

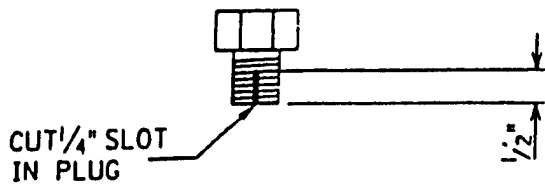
NUMBER	TITLE
PID120	PIPING & INSTRUMENT DIAGRAM

1

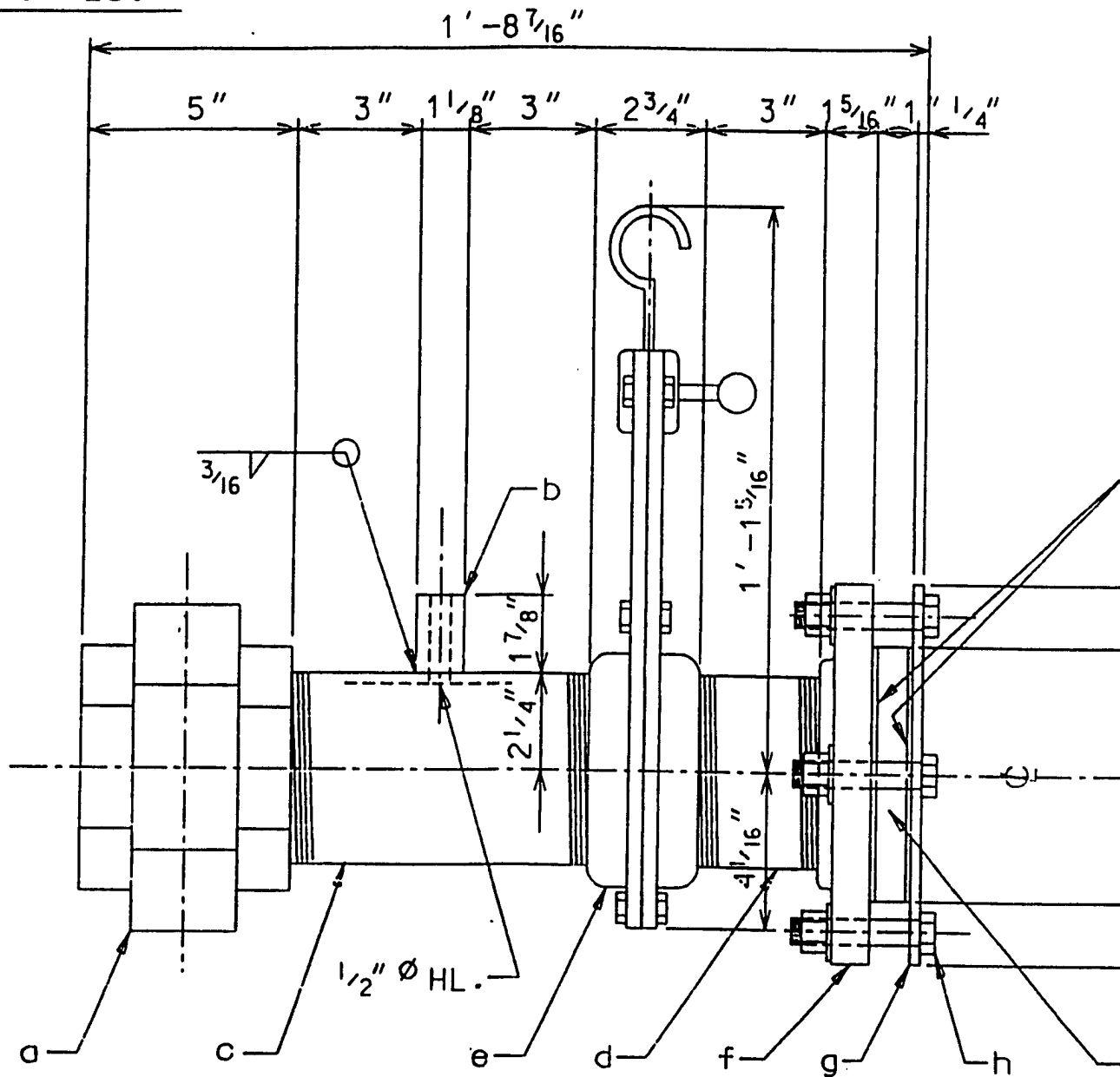


DETAIL D

		PREPARED FOR ROY F. WESTON, INC.	
		CLIENT JOB	
<h1>FUEL TRAIN ASSEMBLY AFTERBURNER</h1>			
APPROVED		DWG. #: FTA120-2	REVISION 3



COUPLING PLUG

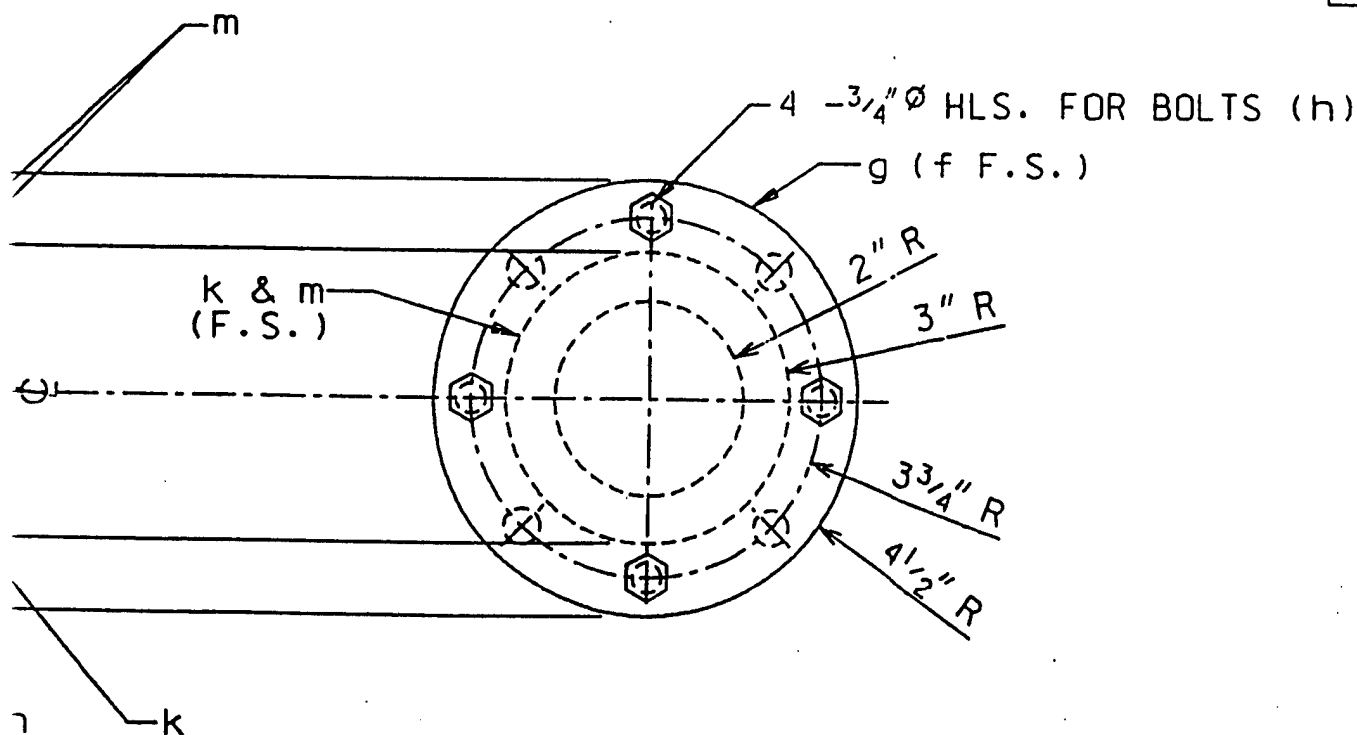


REV	DATE	BY	CKD	REVISION	REV	DATE	BY	CKD	REVISION
6					3				
5					2				
4					1				

①

BILL OF MATERIAL							
MK.	QTY.	DESCRIPTION	LENGTH		MAT'L.	C.S. WT.	S.S. WT.
			FT	IN			
a	1	4" Ø 3000# THREADED PIPE UNION			A105	30	
b	1	1/2" Ø 3000# THREADED PIPE CPLG 1/2 PLUG			A105	1	
c	1	4" Ø SCH40 PIPE (T.B.E.)	0	9 3/8	A106	8	
d	1	4" Ø SCH40 PIPE (T.B.E.)	0	5 1/4	A106	5	
e	1	4" MOSSER TYPE GT SLIDE VALVE					
f	1	4" Ø 150# R.F. THREADED FLANGE			A105	13	
g	1	R 1/4" x 4" I.D. x 9" O.D.			A36	4	
h	4	5/8" Ø H.S.B. 1/2 NUT & WASH.	0	2 1/4	A325	1	
k	1	3/4" THK. x 6" Ø PYREX GLASS, P/N 692540					
m	2	1/8" THK. x 4" I.D. x 6" O.D.					
		COMPRESS. GASKET (KLINGER #C-4401)					

C.S. WT. 62



SIGHT PORT w/ VALVE - 4"Ø

DRAWN: OU	DATE: 1/10/95	JOB: STANDARD
CHECKED: JLB	DATE: 1/11/95	DWG NO: AES-5-53
CERTIFIED:	DATE: / /	REVISION: ① - As BUILT 2/27/95

Arrleach

6506 S. Lewis, Suite 230
Tulsa, OK 74136

ENVIRONMENTAL SYSTEMS, INCORPORATED

CAD Filename : AES-5-53.DGN

THERMAL OXIDIZER EQUIPMENT (CO

<u>DRAWING NO.:</u>	<u>REV. NO.:</u>	<u>DRAWING DATE</u>	<u>DRAWING DESCRIPTION</u>
ES120-1	3	8/1/96	ELECTRICAL SCHEMATIC
ES120-2	3	8/1/96	ELECTRICAL SCHEMATIC
ES120-3	3	8/1/96	ELECTRICAL SCHEMATIC
ES120-4	3	8/1/96	ELECTRICAL SCHEMATIC
ES120-5	3	8/1/96	ELECTRICAL SCHEMATIC
LCP120-1	2	8/1/96	LOCAL CONTROL PANEL
LCP120-2	3	8/1/96	LOCAL CONTROL PANEL
LCP120-3	2	8/1/96	LOCAL CONTROL PANEL
IC120-1	3	8/1/96	INTERCONNECTION DIA
IC120-2	3	8/1/96	INTERCONNECTION DIA
IC120-3	3	8/1/96	INTERCONNECTION DIA
PID120	4	8/1/96	PROCESS & INSTRUMENT
RCP120-1	3	8/1/96	REMOTE CONTROL PANEL
RCP120-2	3	8/1/96	REMOTE CONTROL PANEL

①

THERMAL OXIDIZER EQUIPMENT

(continued)

EQUIPMENT (CONTINUED)

DRAWING DESCRIPTION

ELECTRICAL SCHEMATIC - AFTERBURNER
ELECTRICAL SCHEMATIC - AFTERBURNER
ELECTRICAL SCHEMATIC - AFTERBURNER
ELECTRICAL SCHEMATIC - AFTERBURNER
ELECTRICAL SCHEMATIC - AFTERBURNER

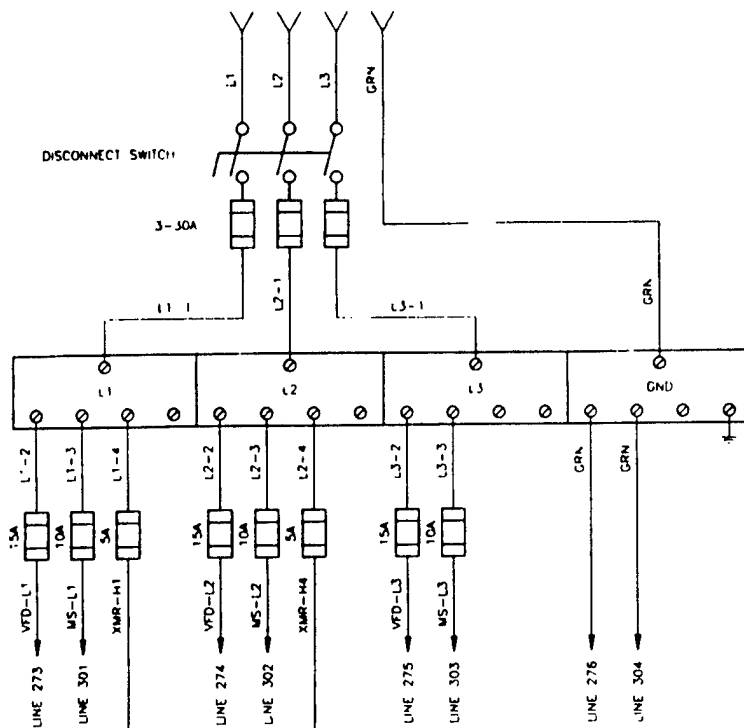
LOCAL CONTROL PANEL ASSEMBLY - AFTERBURNER
LOCAL CONTROL PANEL ASSEMBLY - AFTERBURNER
LOCAL CONTROL PANEL ASSEMBLY - AFTERBURNER
INTERCONNECTION DIAGRAM - AFTERBURNER
INTERCONNECTION DIAGRAM - AFTERBURNER
INTERCONNECTION DIAGRAM - AFTERBURNER
PROCESS & INSTRUMENTATION DIAGRAM - AFTERBURNER

REMOTE CONTROL PANEL ASSEMBLY - AFTERBURNER
REMOTE CONTROL PANEL ASSEMBLY - AFTERBURNER

480V, 3 PH, 60 HZ POWER
BY OTHERS

DISCONNECT SWITCH

3-30A



480/230V
TRANSFORMER - 2 KVA

120V

COOLING FAN

REMOTE LOCAL

HS-167

HS-158E

OFF HAND AUTO

CR-29

CR-28

LINE 49

LINE 35

LINE 37

LINE 41

POWER

REMOTE 33, 55 117

LOCAL 32, 54 116

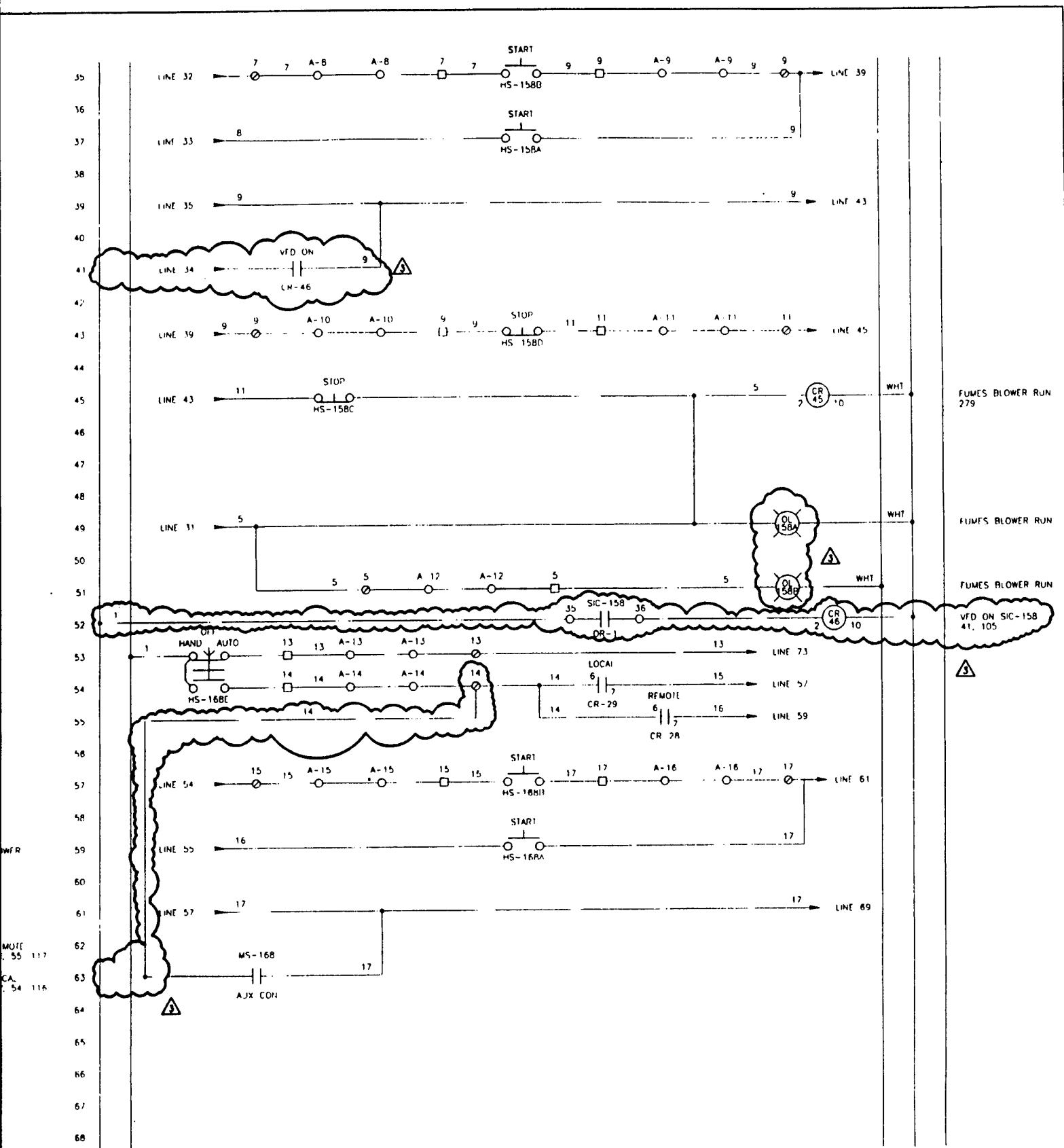
GENERAL NOTES

1 SEE LEGEND ON DWG ES120-5

PLOTTED 08/02/96
PLT. SC. 1=1

REFERENCE DRAWINGS

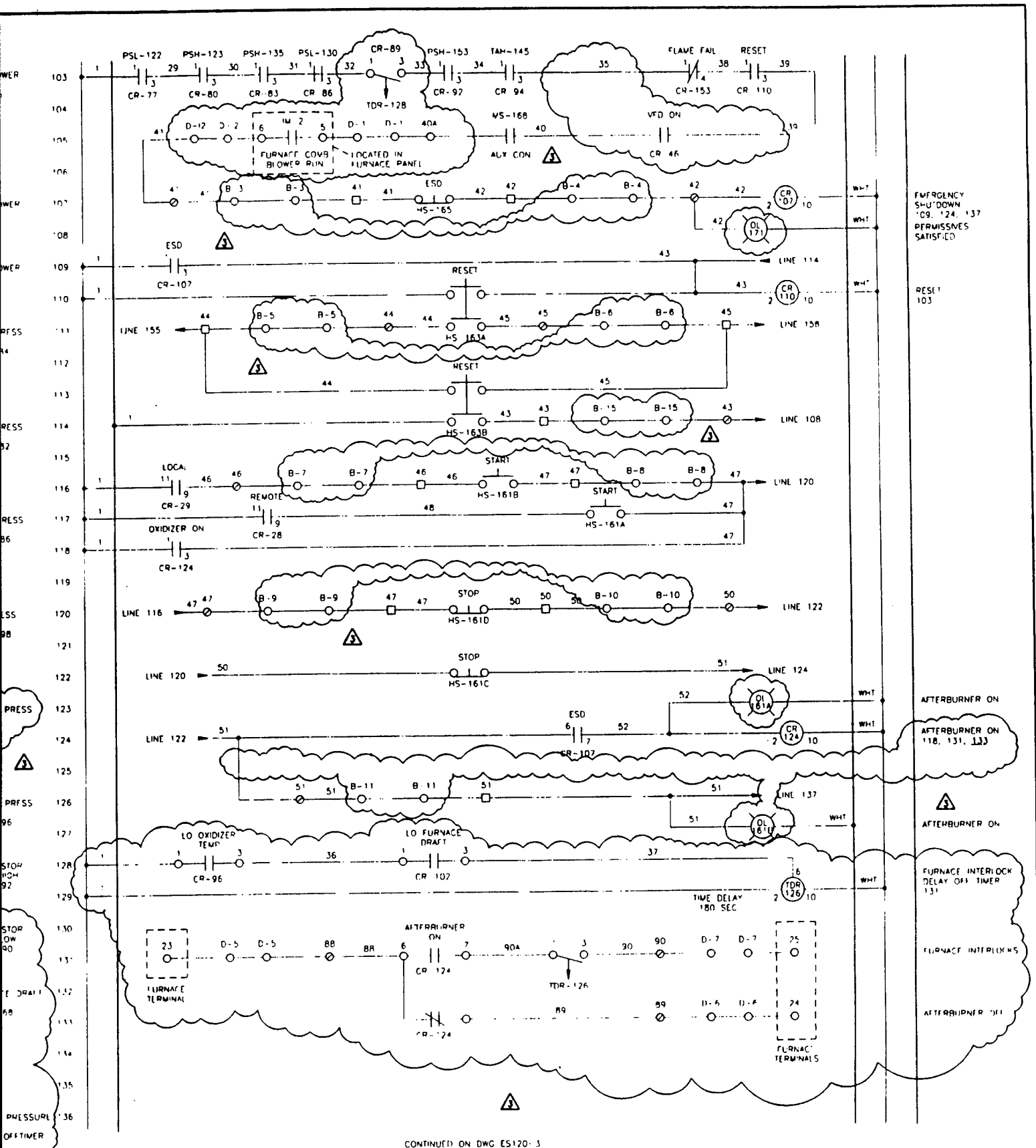
NUMBER	TITLE
PID120	PIPING & INSTRUMENT DIAGRAM
IC120	INTERCONNECTION DIAGRAM
LCPI120	LOCAL CONTROL PANEL ASSEMBLY
RCPI120	REMOTE CONTROL PANEL ASSEMBLY
FTA120	FUEL TRAIN ASSEMBLY



CONTINUED ON DWG ES120-2

REVISIONS				ENGINEERING RECORD			
NO	DESCRIPTION	BY	DATE	SCALE	DATE	DATE	DATE
0	FOR CONSTRUCTION	JW	3-4-95				
1	REVISED LINES 28 & 29	JW	6-8-95				
2	RECORD	JW	7-5-95				
3	FIELD MODIFICATIONS	Wp	8/1/96				

<div> <div>Arrtech</div> <div>ENVIRONMENTAL SYSTEMS</div> </div>				<div> <div>PREPARED FOR</div> <div>ROY F. WESTON, INC.</div> </div>			
<div> <div>CLIENT JOB</div> </div>				<div> <div>ELECTRICAL SCHEMATIC</div> <div>AFTERBURNER</div> </div>			
<div> <div>APPROVED</div> </div>				<div> <div>DWG. #:</div> <div>ES120-1</div> <div>REVISION 3</div> </div>			



CONTINUED ON DWG ES120-3

REVISIONS						ENGINEERING RECORD				APPROVED	DWG. #:	REVISION
NO	DESCRIPTION	BY	DATE	CHK	DATE	SCALE	NONE	DATE	DATE			
0	FOR CONSTRUCTION	JW	3-4-95			JW	9-28-94					
1	ADDED HS-163B	JW	4-7-95									
2	RECORD	JW	7-4-95									
3	FIELD MODIFICATIONS	WESTON	8-1-96	qdp	8/1/96							

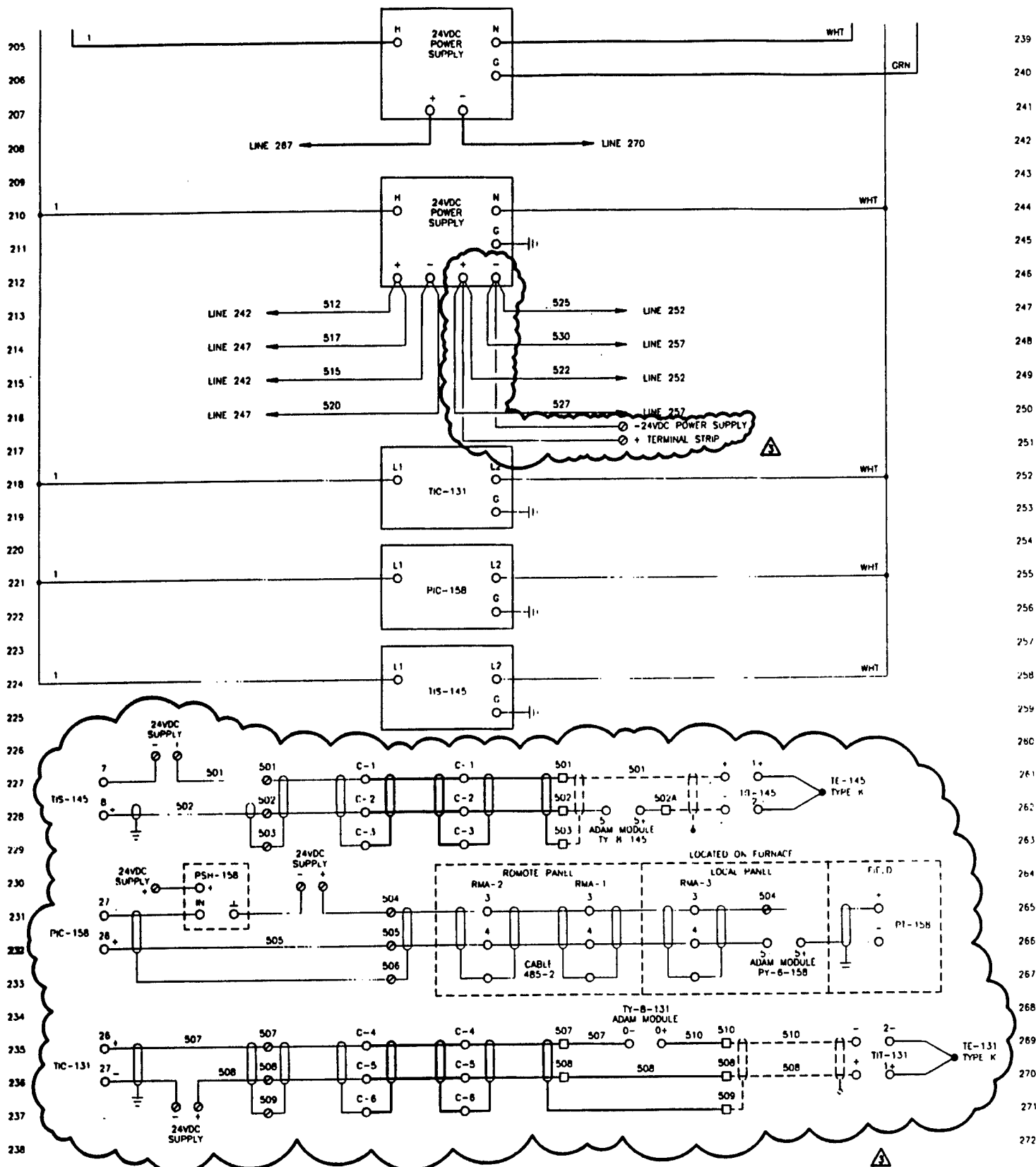


PREPARED FOR
ROY F. WESTON, INC.

CLIENT JOB

ELECTRICAL SCHEMATIC AFTERBURNER

APPROVED _____ DWG. #: ES120-2 REVISION 3

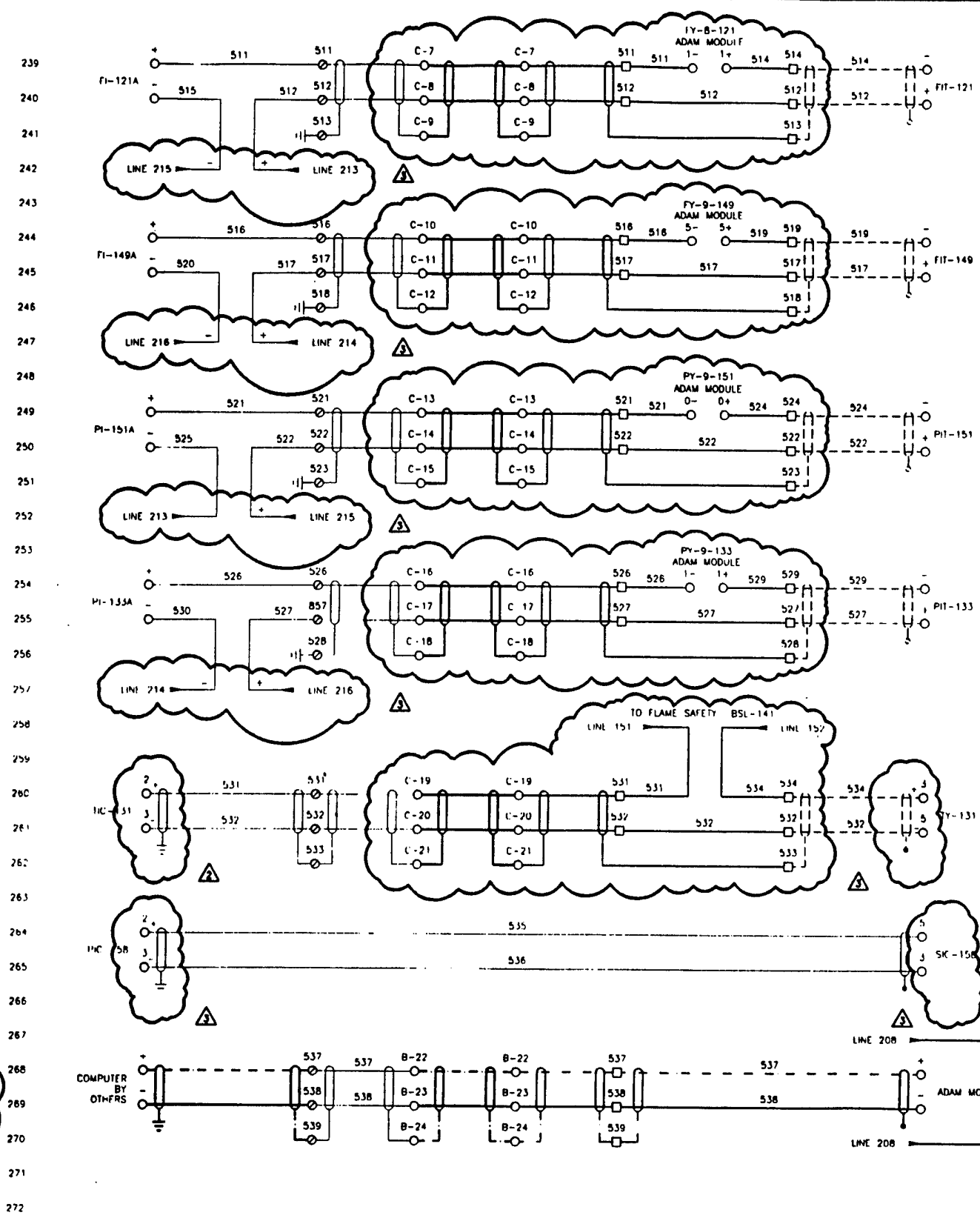


GENERAL NOTES

1 SEE LEGEND ON DWG ES120-5

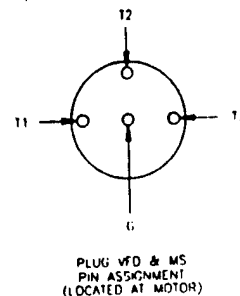
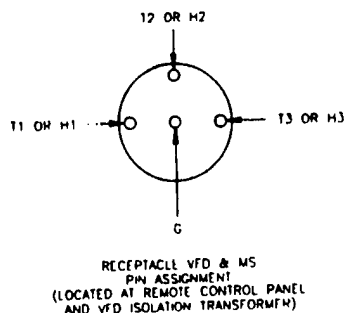
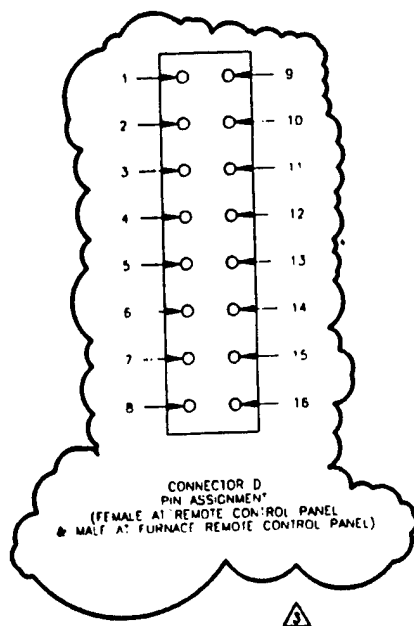
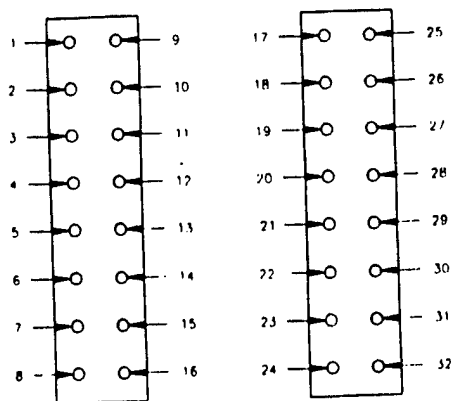
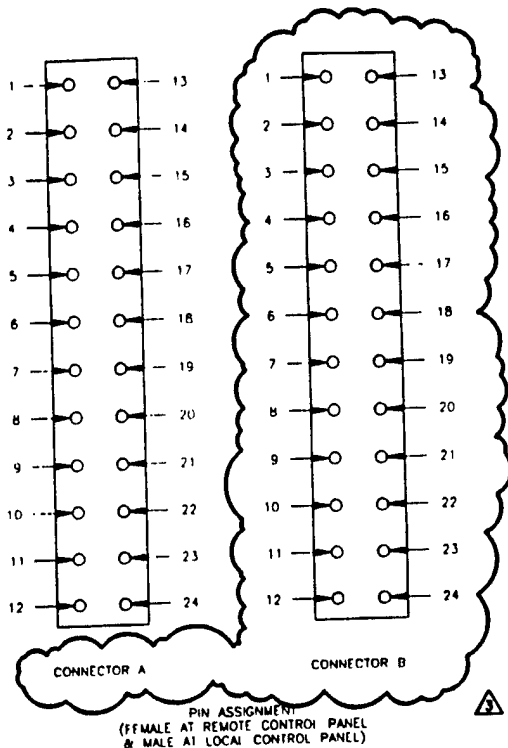
REFERENCE DRAWINGS

NUMBER	TITLE
PID120	PIPING & INSTRUMENT DIAGRAM
IC120	INTERCONNECTION DIAGRAM
LCP120	LOCAL CONTROL PANEL ASSEMBLY
RCP120	REMOTE CONTROL PANEL ASSEMBLY
FTA120	FUEL TRAIN ASSEMBLY



CONTINUED ON DWG ES120-5

REVISIONS						ENGINEERING RECORD				<div>Arrtech</div> <div>ENVIRONMENTAL SYSTEMS</div>		PREPARED FOR ROY F. WESTON, INC.	
NO	DESCRIPTION	BY	DATE	CRD	DATE	SCALE	DATE	DATE					
0	FOR CONSTRUCTION	JW	3-1-95										
1	REVISED ES120-1, 2, 3 & 5	JW	4-8-95			JW	1-3-95						
2	RECORD	JW	7-6-95			ENGR	DATE						
3	FIELD MODIFICATIONS	CLP	8/1/96									CLIENT JOB	
												<div>ELECTRICAL SCHEMATIC AFTERBURNER</div>	



LEGEND

---	INTERCONNECTING WIRING INSIDE REMOTE CONTROL PANEL
---	INTERCONNECTING WIRING INSIDE LOCAL CONTROL PANEL
---	INTERCONNECTING WIRING ON AFTERBURNER SH-1
---	INTERCONNECTING WIRING BY OTHERS
○	REMOTE CONTROL PANEL TERMINAL
□	LOCAL CONTROL PANEL TERMINAL
○	DEVICE PIN OR TERMINAL

REVISIONS				ENGINEERING RECORD			
NO	DESCRIPTION	BY	DATE	CHKD	DATE	SCALE	NOTE
0	FOR CONSTRUCTION	JW	3-6-95				
1	ADDED VFD ISOLATION XMR	JW	4-27-95				
2	RECORD	JW	7-6-95				
3	FIELD MODIFICATIONS	CLD	8-19-95				

Artech
ENVIRONMENTAL SYSTEMS

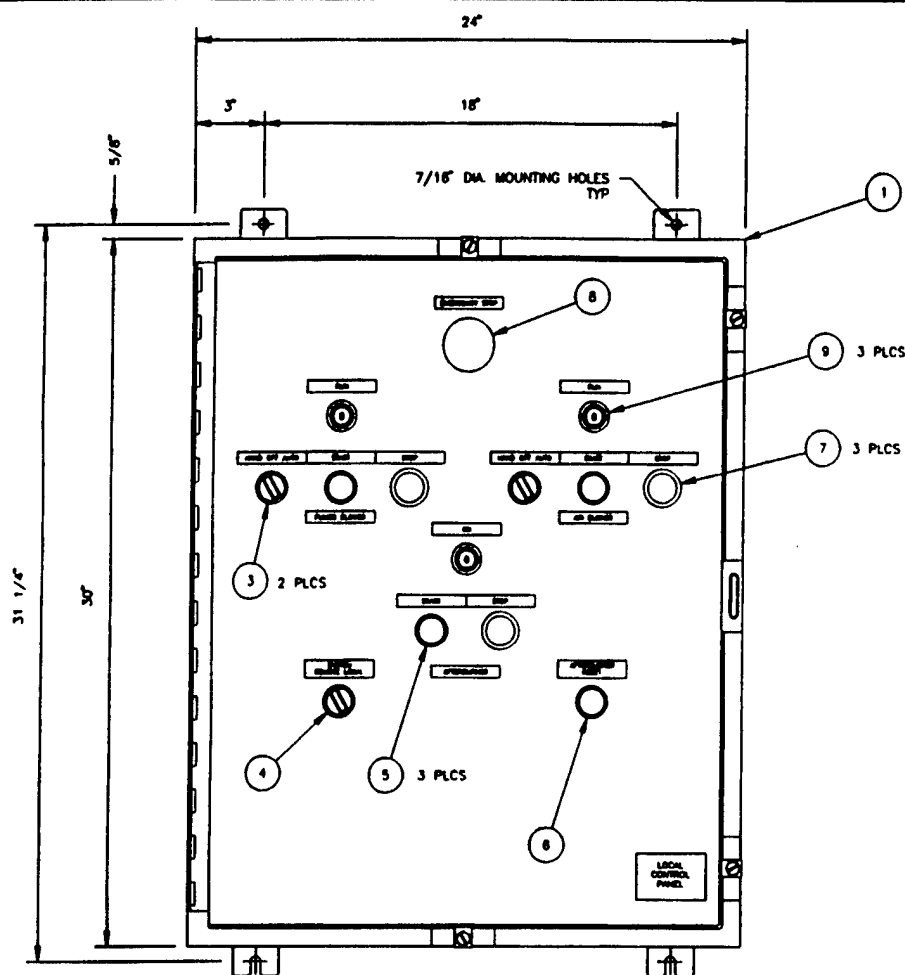
PREPARED FOR
ROY F. WESTON, INC.

CLIENT JOB#

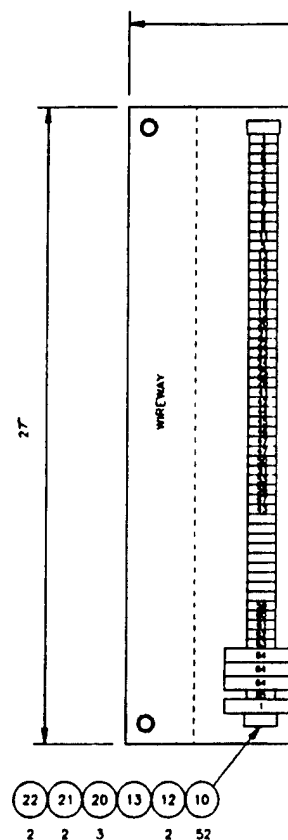
ELECTRICAL SCHEMATIC AFTERBURNER

APPROVED

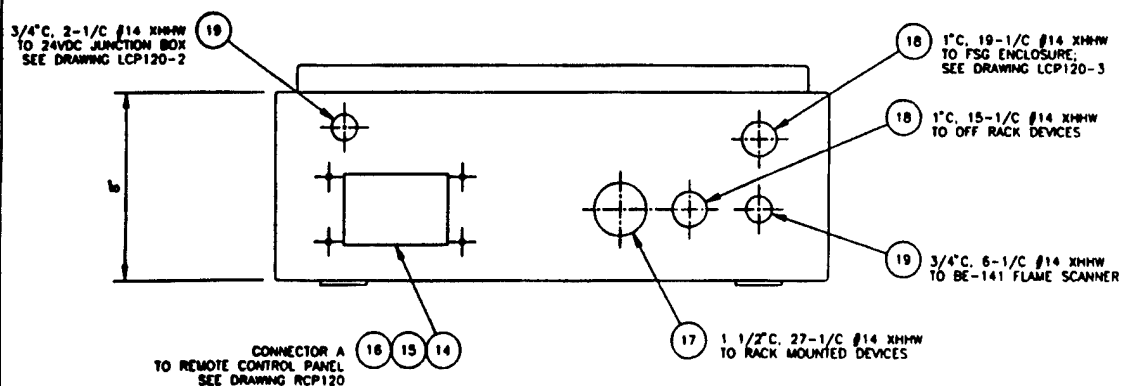
DWG. #: ES120-5 REVISION 3



FRONT



E



BOTTOM

LOCAL CONTROL PANEL

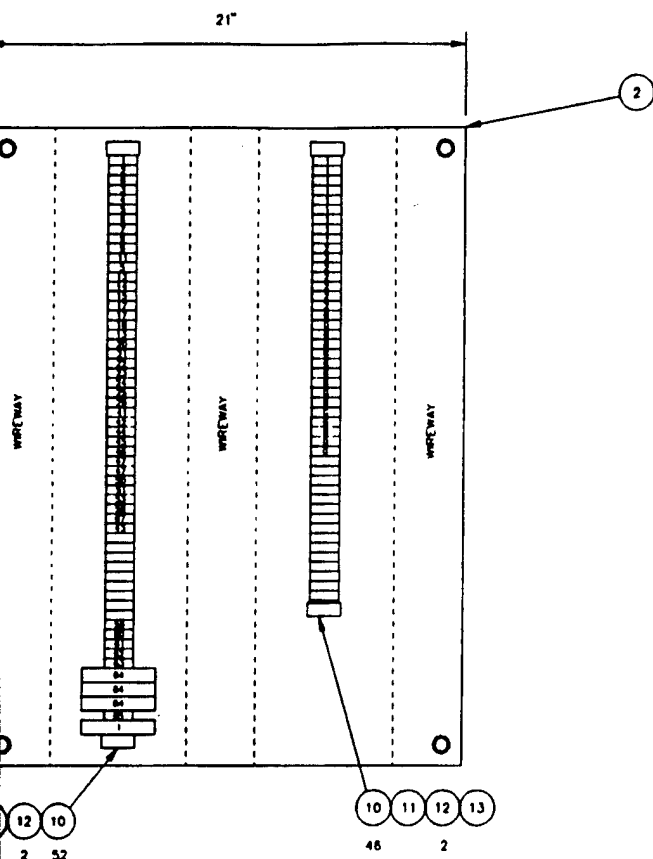
GENERAL NOTES

- CONDUIT & CONNECTOR LOCATIONS ARE FOR REFERENCE ONLY. THE ACTUAL LOCATION MAY VARY FROM THAT SHOWN DUE TO INSTALLATION PARAMETERS.
- ENCLOSURE FINISH: #61 GREY POLYESTER POWDER COATING.
- NAMEPLATES TO BE WHITE PLASTIC LAMINATE WITH BLACK CHARACTERS.
- WIRE TERMINATIONS TO TERMINAL BLOCKS TO BE BY HOOK FORK TYPE CONNECTORS.

REFERENCE DRAWINGS

NUMBER	TITLE
ES120	ELECTRICAL SCHEMATIC
IC120	INTERCONNECTION DIAGRAM
RCP120	REMOTE CONTROL PANEL ASSEMBLY

1



BACK PANEL

BILL OF MATERIAL

ITEM	QTY	DESCRIPTION
1	1	ENCLOSURE; HOFFMAN A-30H24BLP
2	1	PANEL; HOFFMAN A-30P24
3	2	SWITCH, SELECTOR; ALLEN-BRADLEY 800H-JR4AP
4	1	SWITCH, SELECTOR; ALLEN-BRADLEY 800H-HR2AP
5	3	SWITCH, PUSHBUTTON; ALLEN-BRADLEY 800H-R2D1P
6	1	SWITCH, PUSHBUTTON; ALLEN-BRADLEY 800H-R2D1PD1P
7	3	SWITCH, PUSHBUTTON; ALLEN-BRADLEY 800H-FRXJT2D2P
8	1	SWITCH, PUSHBUTTON; ALLEN-BRADLEY 800H-FRXJT6D2P
9	3	INDICATOR; ALLEN-BRADLEY 800H-PR16G
10	9B	BLOCK, TERMINAL; ALLEN-BRADLEY 1492-F3
11	1	END BARRIER, TERMINAL; ALLEN-BRADLEY 1492-N18
12	4	END STOP, TERMINAL; ALLEN-BRADLEY 1492-N23
13	A/R	MOUNTING RAIL, TERMINAL; ALLEN-BRADLEY 1492-N22
14	1	BASE, CONNECTOR; T & B PB44B
15	1	CONNECTOR; T & B FS124 (1-24)
16	1	CONNECTOR; T & B FS148 (25-48)
17	1	HUB, CONDUIT; CROUSE-HINDS HUB5 (1 1/2")
18	2	HUB, CONDUIT; CROUSE-HINDS HUB3 (1")
19	1	HUB, CONDUIT; CROUSE-HINDS HUB2 (3/4")
20	3	BLOCK, FUSE; ALLEN-BRADLEY 1492-UF8
21	2	FUSE; 13/32" x 1 1/2", 3 AMP
22	2	FUSE; 13/32" x 1 1/2", 1 AMP

REVISIONS						ENGINEERING RECORD			
NO	DESCRIPTION	BY	DATE	CHK	DATE	SCALE	DATE	CHK	DATE
0	FOR CONSTRUCTION	JW	3-4-85			5" = 1'-0"			
1	ADDED RESET SWITCH	JW	4-7-85			JW	10-2-94		
2	RECORD	JW	7-4-85			ENGR			
2	As-Built	CAP	8/1/96						

Artech
ENVIRONMENTAL SYSTEMS

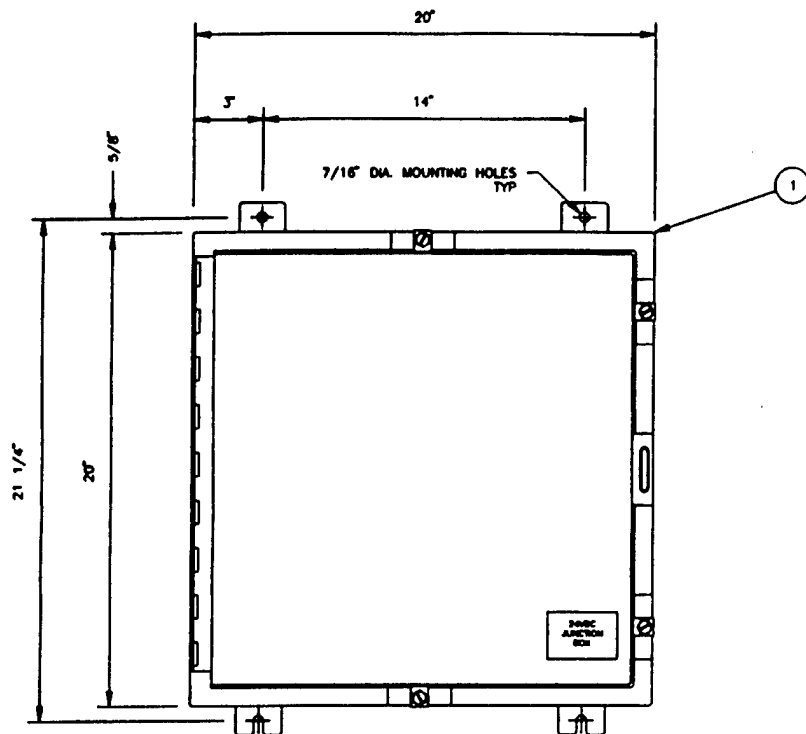
PREPARED FOR
ROY F. WESTON, INC

CLIENT JOB

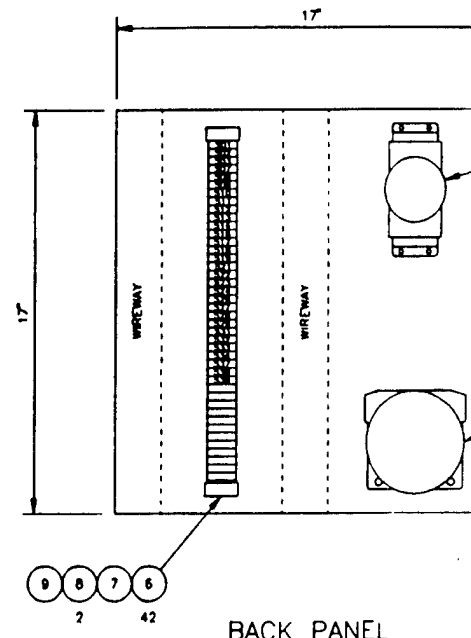
**LOCAL CONTROL PANEL ASSY
AFTERBURNER**

APPROVED

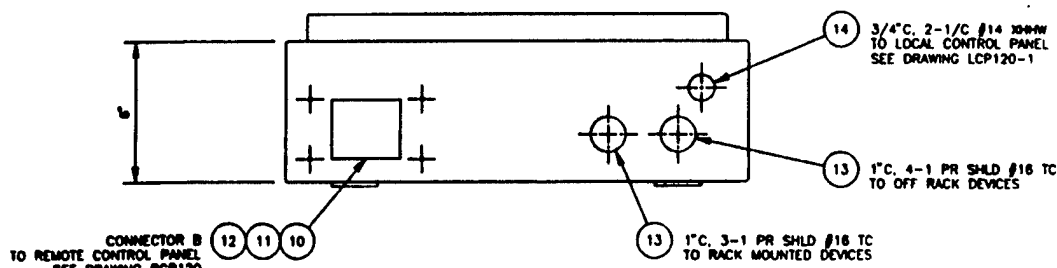
BWB: #1 LCP120-1 REVISION 2



FRONT



BACK PANEL



BOTTOM

24VDC JUNCTION BOX

GENERAL NOTES

1. CONDUIT & CONNECTOR LOCATIONS ARE FOR REFERENCE ONLY. THE ACTUAL LOCATION MAY VARY FROM THAT SHOWN DUE TO INSTALLATION PARAMETERS.
2. ENCLOSURE FINISH: #61 GREY POLYESTER POWDER COATING.
3. NAMEPLATES TO BE WHITE PLASTIC LAMINATE WITH BLACK CHARACTERS

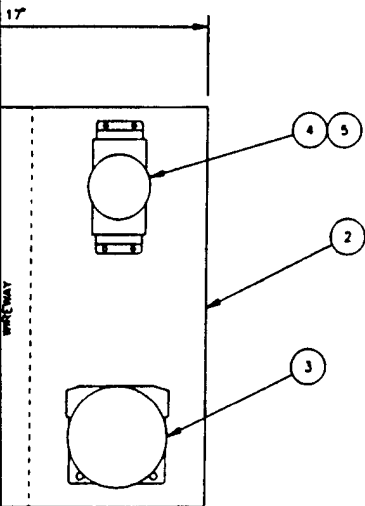
REFERENCE DRAWINGS

NUMBER	TITLE
ES120	ELECTRICAL SCHEMATIC
IC120	INTERCONNECTION DIAGRAM
RCP120	REMOTE CONTROL PANEL ASSEMBLY

1

BILL OF MATERIAL

ITEM	QTY	DESCRIPTION
1	1	ENCLOSURE; HOFFMAN A-20H20ALP
2	1	PANEL; HOFFMAN A-20P20
3	1	SUPPLY, POWER; EIT MODEL RP1072-24 24VDC/3A
4	1	MODULE, INTERFACE; ADVANTECH ADAM 4017
5	1	BRACKET, PANEL MOUNTING; FOR ITEM 4
6	42	BLOCK, TERMINAL; ALLEN-BRADLEY 1492-F1
7	1	END BARRIER, TERMINAL; ALLEN-BRADLEY 1492-N18
8	2	END STOP, TERMINAL; ALLEN-BRADLEY 1492-N23
9	A/R	MOUNTING RAIL, TERMINAL; ALLEN-BRADLEY 1492-N22
10	1	BASE, CONNECTOR; T & B PB132
11	1	CONNECTOR; T & B FS116 (1-16)
12	1	CONNECTOR; T & B FS132 (17-32)
13	2	HUB, CONDUIT; CROUSE-HINDS HUB3 (1")
14	1	HUB, CONDUIT; CROUSE-HINDS HUB2 (3/4")



PANEL

REVISIONS						ENGINEERING RECORD			
NO	DESCRIPTION	BY	DATE	CHK	DATE	SCALE	DATE	CHK	DATE
0	FOR CONSTRUCTION	JW	3-6-95			5"=1'-0"			
1	REVISED LCP120-1	JW	1-7-95						
2	RECORD	JW	1-7-95						
3	FIELD MODIFICATIONS	yp	1-1-96						

Artech
ENVIRONMENTAL SYSTEMS

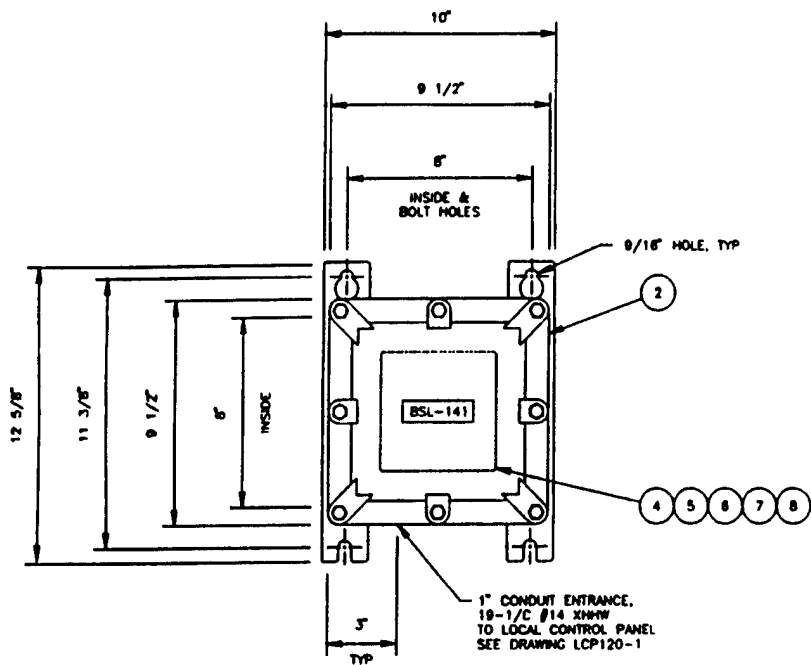
PREPARED FOR
ROY F. WESTON, INC

CLIENT JOB

LOCAL CONTROL PANEL ASSY
AFTERBURNER

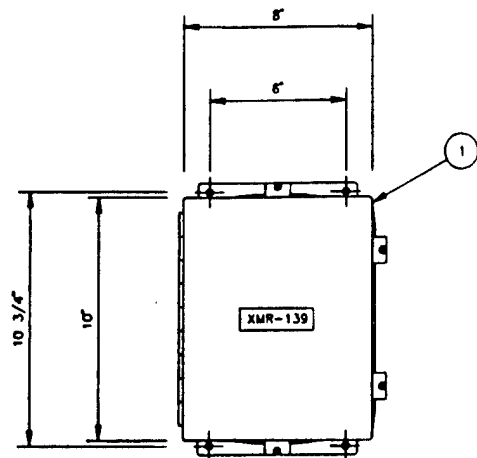
APPROVED

DWG. #: LCP120-2 REVISION 3

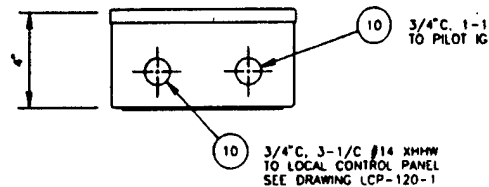


FLAME SAFEGUARD ENCLOSURE

NOTE: INSTALL VENT (C-H ECD13) IN TOP OF ENCLOSURE & DRAIN (C-H ECD11) IN BOTTOM OF ENCLOSURE



FRONT



BOTTOM

IGNITION TRANSFORMER

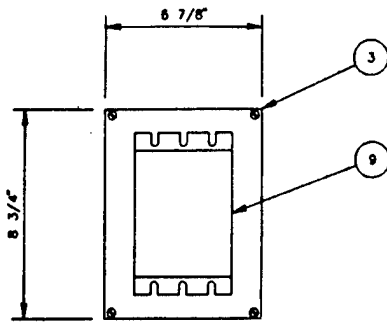
GENERAL NOTES

- CONDUIT LOCATIONS ARE FOR REFERENCE ONLY. THE ACTUAL LOCATION MAY VARY DUE TO INSTALLATION PARAMETERS.
- FSG ENCLOSURE FINISH: NONE
- TRANSFORMER FINISH: # 61 GREY POLYESTER POWDER COATING
- NAMEPLATES TO BE WHITE LAMINATE PLASTIC WITH BLACK CHARACTERS.

REFERENCE DRAWINGS

NUMBER	TITLE
ES120	ELECTRICAL SCHEMATIC
IC120	INTERCONNECTION DIAGRAM
RCP120	REMOTE CONTROL PANEL ASSEMBLY

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[illegible]

10 3/4°C. 1-1/C #16 15KV
TO PILOT IGNITOR

3-1/C #14 XHHW
LOCAL CONTROL PANEL
DRAWING LCP-120-1

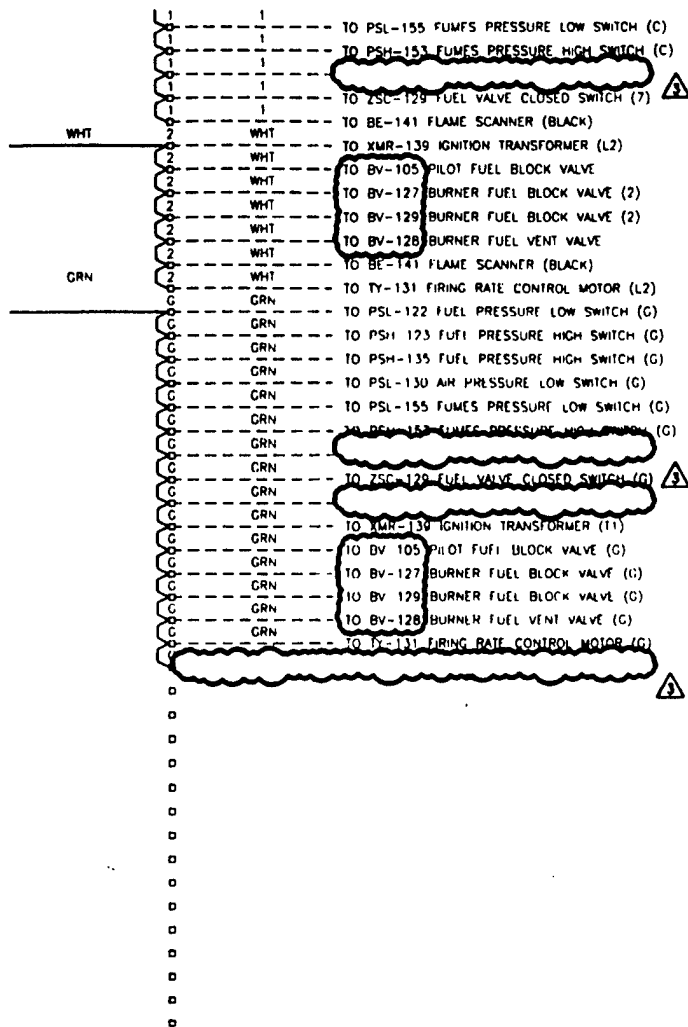
ON TRANSFORMER ENCLOSURE

[illegible]

SWITCH (NO)
 SWITCH (NC)
 SWITCH (NC)
 SWITCH (NO)
 SWITCH (NO)
 SWITCH (NC)

SWITCH (B)
)
 NO)
 ER (L1)
 VALVE
 VALVE (1)
 VALVE (1)
 VALVE
 MOTOR (L1)
 SWITCH (C)
 SWITCH (C)
 SWITCH (C)
 SWITCH (C)

120 VOLT WIRING

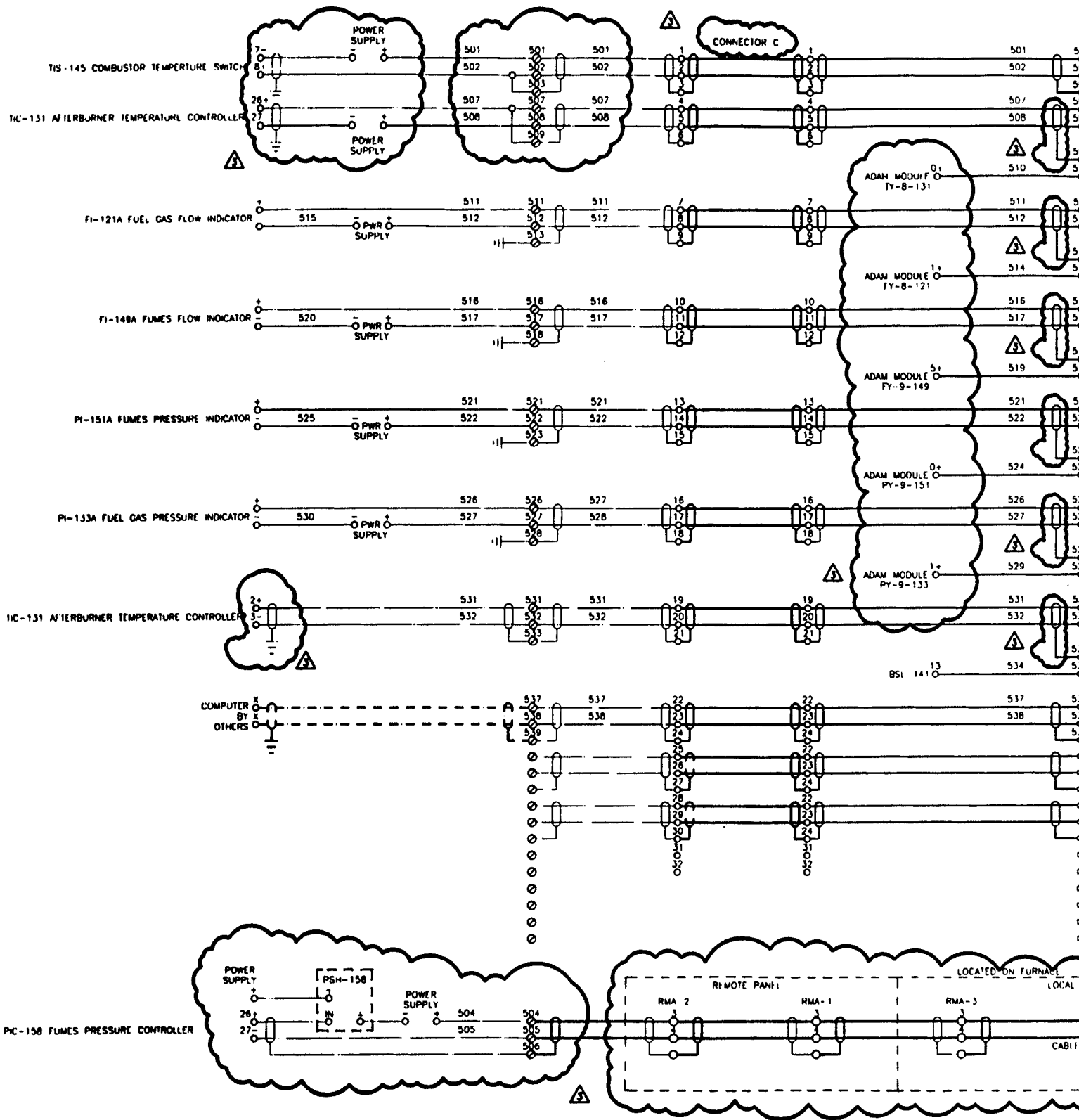


LEGEND

- INTERCONNECTING WIRING INSIDE REMOTE CONTROL PANEL
- ===== INTERCONNECTING WIRING INSIDE LOCAL CONTROL PANEL
- INTERCONNECTING WIRING ON AFTERBURNER SKID
- INTERCONNECTING WIRING BY OTHERS
- REMOTE CONTROL PANEL TERMINAL
- LOCAL CONTROL PANEL TERMINAL
- DEVICE PIN OR TERMINAL

REVISIONS						ENGINEERING RECORD			
NO	DESCRIPTION	BY	DATE	CHK	DATE	SCALE	NO	DATE	DATE
0	FOR CONSTRUCTION	JW	3-8-95						
1	ADDED WIRE 43	JW	4-7-95						
2	RECORD	JW	7-6-95						
3	FIELD MODIFICATIONS	JW	8-1-95						

	PREPARED FOR ROY F. WESTON, INC.	
	CLIENT JOB	
INTERCONNECTION DIAGRAM AFTERBURNER		
APPROVED	DWG. # 10120-1	REVISED 3



ANALOG WIRING

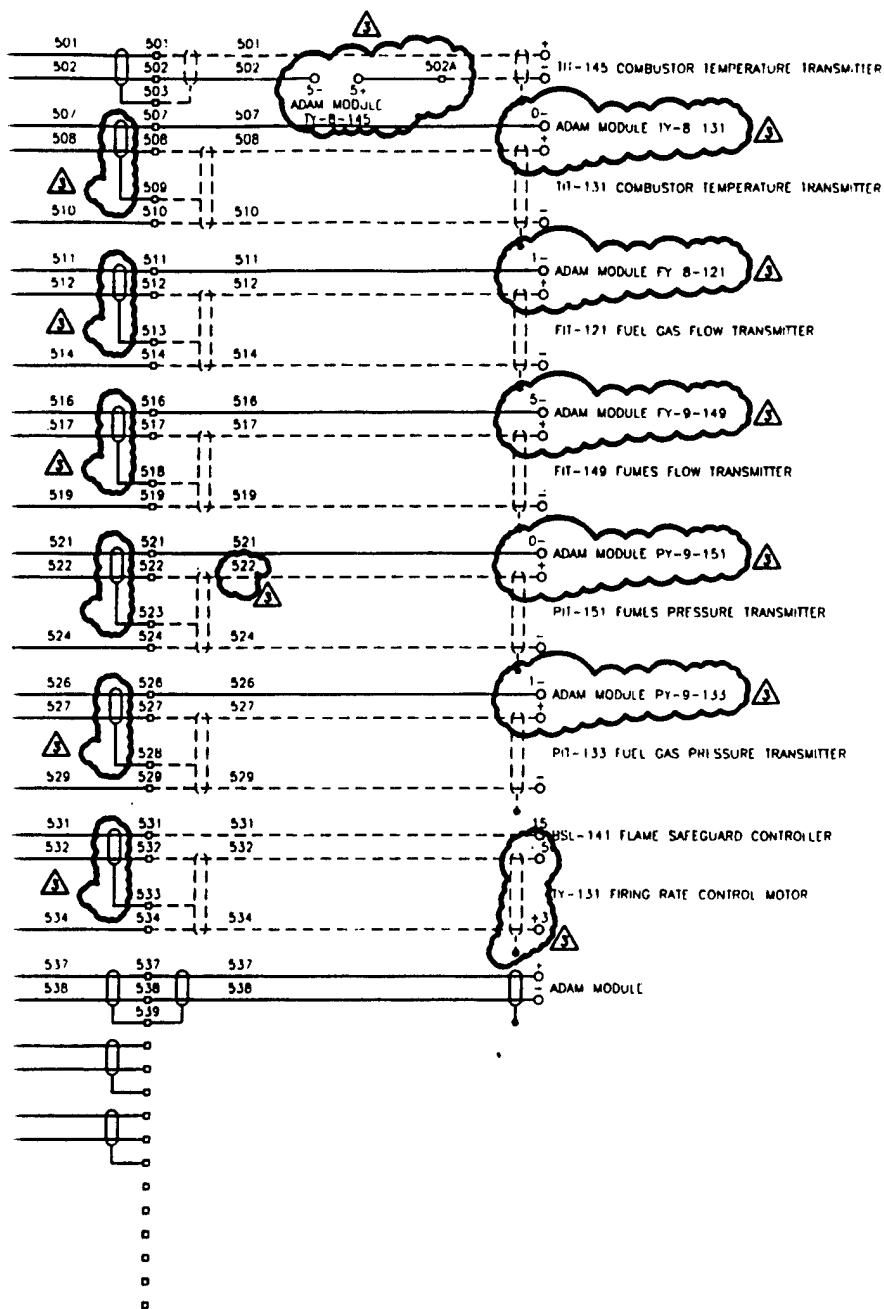
GENERAL NOTES

REFERENCE DRAWINGS

NUMBER	TITLE
PID120	PIPING & INSTRUMENT DIAGRAM
ES120	ELECTRIC SCHEMATIC
LCP120	LOCAL CONTROL PANEL ASSEMBLY
RCP120	REMOTE CONTROL PANEL ASSEMBLY

PLOTTED 08/02/86 9:33
PLT. SC. 1-1

1



LEGEND

- INTERCONNECTING WIRING INSIDE REMOTE CONTROL PANEL
- INTERCONNECTING WIRING INSIDE LOCAL CONTROL PANEL
- INTERCONNECTING WIRING ON AFTERBURNER SKID
- INTERCONNECTING WIRING BY OTHERS
- REMOTE CONTROL PANEL TERMINAL
- LOCAL CONTROL PANEL TERMINAL
- DEVICE PIN OR TERMINAL

REVISIONS					ENGINEERING RECORD				
NO	DESCRIPTION	BY	DATE	CRD	DATE	SCALE	NONE	DATE	DATE
0	FOR CONSTRUCTION	JW	3-6-85						
1	REVISED IC120-1 & 3	JW	4-7-85			JW	1-5-95		
2	RECORD	JW	7-6-85						
3	FIELD MODIFICATIONS	clp	9/1/96						

Arrtech
ENVIRONMENTAL SYSTEMS

PREPARED FOR
ROY F. WESTON, INC.

CLIENT JOB

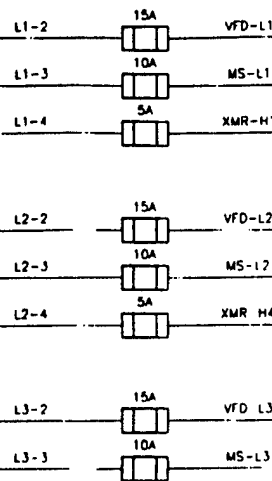
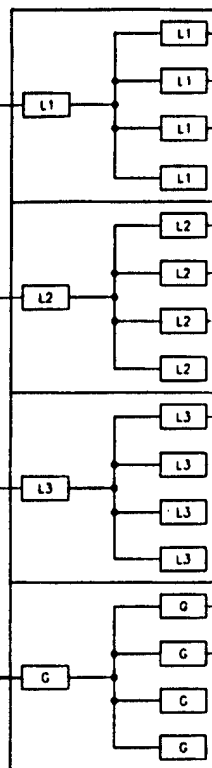
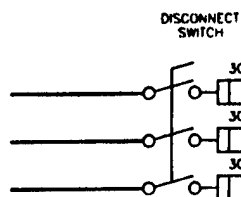
INTERCONNECTION DIAGRAM AFTERBURNER

APPROVED

DWG. #: IC120-2

REVISION 3

480V, 3 PH, 60 HZ
POWER
BY
OTHERS



VFD-L1

MS-L1

XMR-H1

VFD-L2

MS-L2

XMR-H4

VFD-L3

MS-L3

GRN

GRN

480 VOLT WIRING

GENERAL NOTES

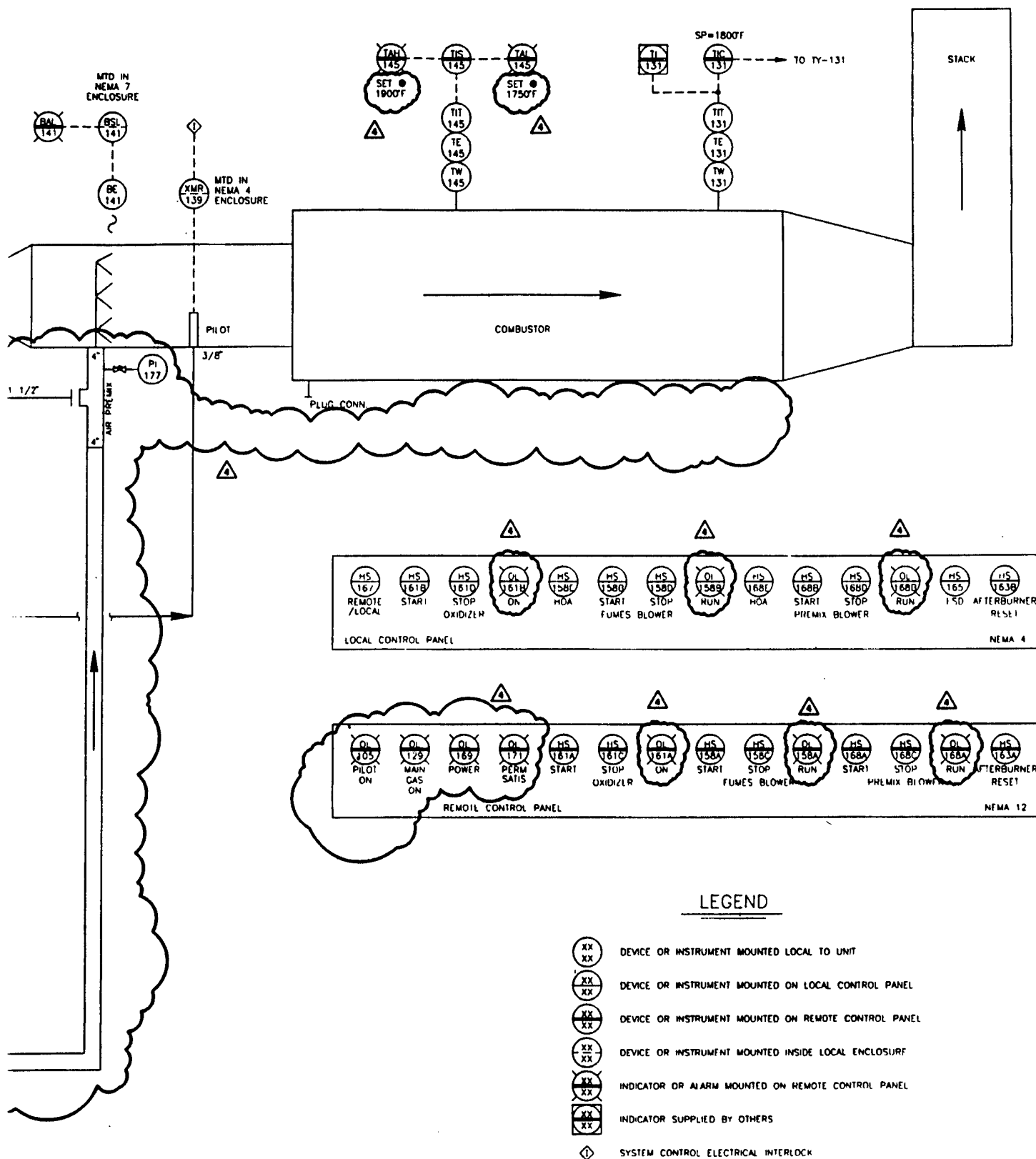
REFERENCE DRAWINGS

NUMBER	TITLE
PI0120	PIPING & INSTRUMENT DIAGRAM
ES120	ELECTRIC SCHEMATIC
LC0120	LOCAL CONTROL PANEL ASSEMBLY
RC0120	REMOTE CONTROL PANEL ASSEMBLY


PLOTTED 08/02/98 9:35
P.L.T. SC. 1-1

1

REVISIONS										ENGINEERING RECORD										<div><div>Artech</div><div>ENVIRONMENTAL SYSTEMS</div></div> <div>PREPARED FOR ROY F. WESTON, INC.</div>																			
NO	DESCRIPTION	BY	DATE	CAD	DATE	SCALE	NONE	DATE	CAD	DATE																													
0	FOR CONSTRUCTION	JW	3-6-95																																				
1	ADDED VED ISOLATION XMR	JW	4-7-95																																				
2	RECORD	JW	7-6-95																																				
3	FIELD MODIFICATIONS	JP	8-2-95																																				
<div>2</div>										<div>INTERCONNECTION DIAGRAM AFTERBURNER</div>										APPROVED																			
																				DWG. #: IC120-3										REVISION									



REVISIONS					ENGINEERING RECORD				
NO	DESCRIPTION	BY	DATE	CHKD	DATE	SCALE	NONE	DATE	DATE
0	FOR CONSTRUCTION	JW	3-6-95			JW	9-28-94		
1	ADDED HS-163B	JW	4-8-95						
2	RECORD	JW	7-6-95						
3	REROUTE DPSI-14/	CM	8-4-95						
4	FIELD MODIFICATIONS	CAP	8/1/96						



Arleth
ENVIRONMENTAL SYSTEMS

PREPARED FOR
ROY F. WESTON, INC

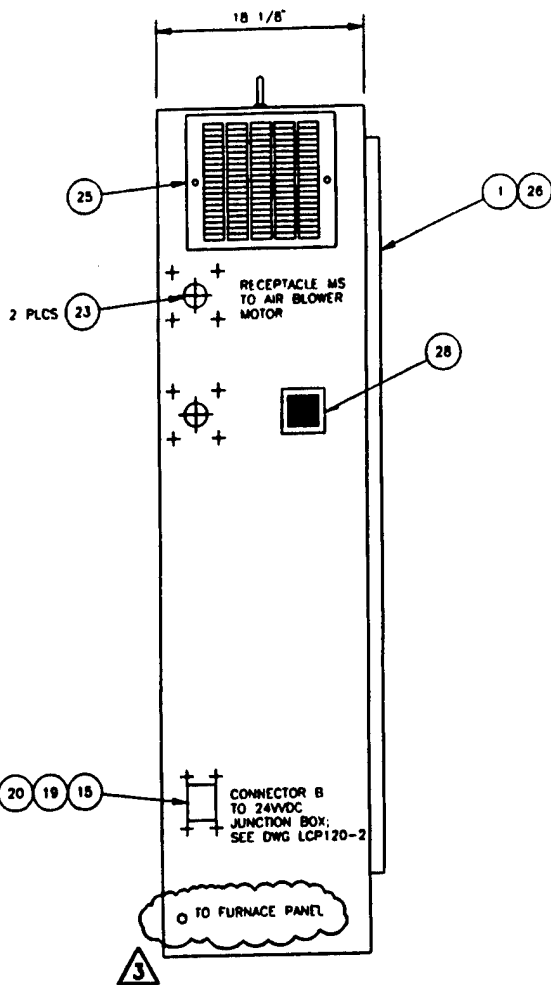
CLIENT JOB

**P & ID
AFTERBURNER**

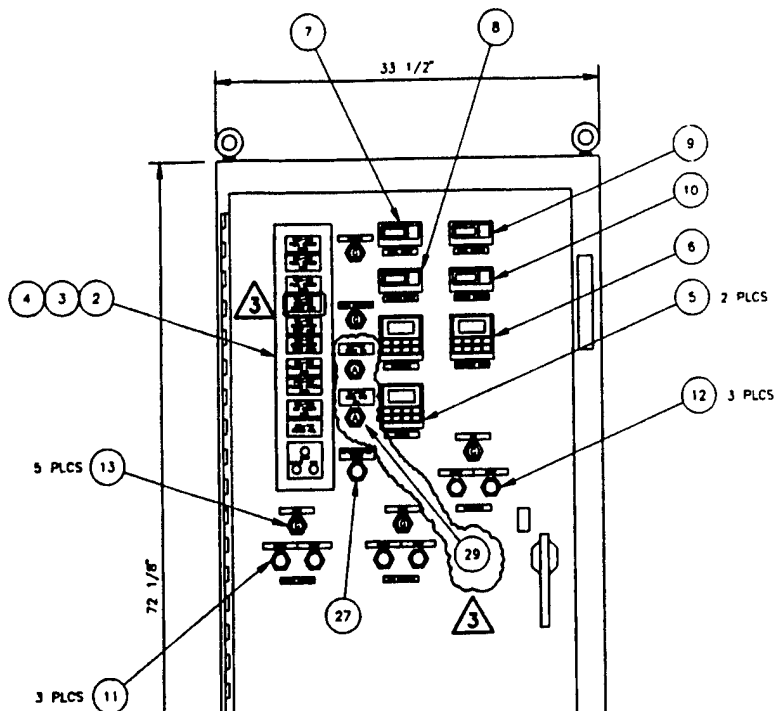
APPROVED

DWG. #: PID120

REVISION 4



LEFT SIDE



FRONT

REMOTE CONTROL PANEL

GENERAL NOTES

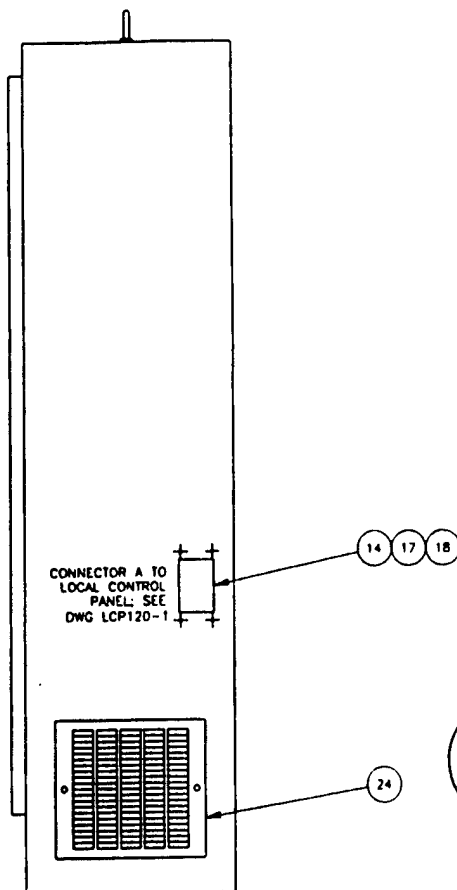
1. CONNECTOR & RECEPTACLE LOCATIONS ARE FOR REFERENCE ONLY. THE ACTUAL LOCATION MAY VARY FROM THAT SHOWN DUE TO INSTALLATION PARAMETERS.
2. ENCLOSURE FINISH: #61 GREY POLYESTER POWDER COATING.
3. NAMEPLATES TO BE WHITE PLASTIC LAMINATE WITH BLACK CHARACTERS.

REFERENCE DRAWINGS

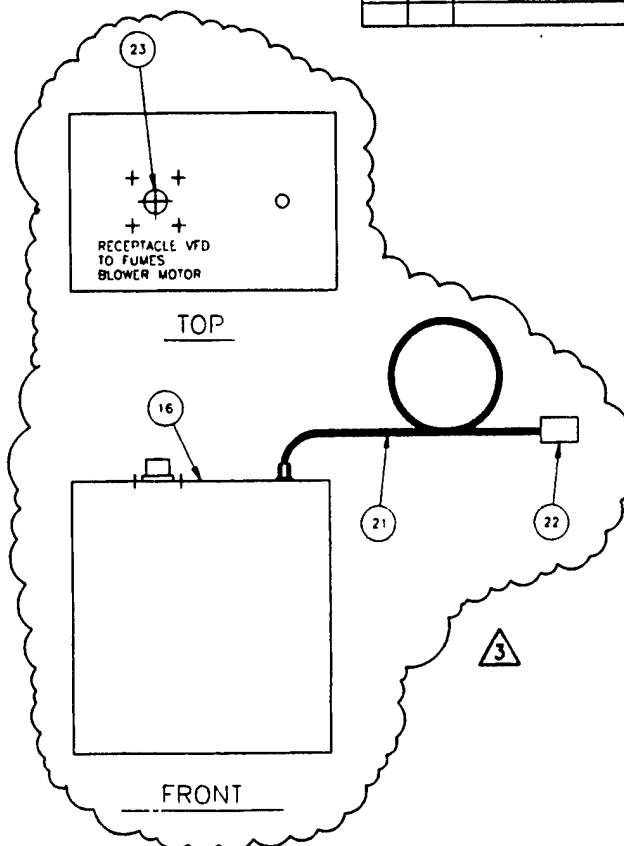
NUMBER	TITLE
ES120	ELECTRICAL SCHEMATIC
IC120	INTERCONNECTION DIAGRAM
LCP120	LOCAL CONTROL PANEL

①

CS
CS



RIGHT SIDE



VFD ISOLATION TRANSFORMER

BILL OF MATERAIL

ITEM	QTY	DESCRIPTION
1	1	ENCLOSURE; HOFFMAN A-72XM3418
2	1	CABINET, ANNUNCIATOR; FONAN 1.6X3LR-2000
3	10	MODULE, ALARM; RONAN X3-2004GP-115VAC
4	1	MODULE, PB & FLASHER; RONAN X3-5002-115VAC
5	2	CONTROLLER; HONEYWELL DC300C-0-0A0-20-0000-0
6	1	SWITCH; HONEYWELL DC200I-2-000-100000-0
7	1	METER; MOORE IND DSX/4-20MA/0-1000/1.0VLP [P]
8	1	METER; MOORE IND DSX/4-20MA/0-4000/1.0VLP/DZ [P]
9	1	METER; MOORE IND DSX/4-20MA/0-6/1.0VLP [P]
10	1	METER; MOORE IND DSX/4-20MA/0-3/1.0VLP [P]
11	3	SWITCH, PUSHBUTTON; ALLEN-BRADLEY 800T-A2D1
12	3	SWITCH, PUSHBUTTON; ALLEN-BRADLEY 800T-FX2D4
13	5	INDICATOR; ALLEN-BRADLEY 800T-PL16G
14	1	BASE, CONNECTOR; T & B PB448
15	1	BASE, CONNECTOR; T & B PB132
16	1	TRANSFORMER, ISOLATION; SQUARE D 11T105HDIT
17	1	CONNECTOR; T & B MS224 (1-24)
18	1	CONNECTOR; T & B MS 248 (25-48)
19	1	CONNECTOR; T & B MS216 (1-16)
20	1	CONNECTOR; T & B MS232 (17-32)
21	1	CABLE; TYPE SO, 4-#8 AWG x 10' LG, 600V, 28 A
22	1	PLUG; MELTRIC 33-11043 (20 AMP)
23	3	RECEPTACLE; MELTRIC 33-14043 (20 AMP)
24	1	PACKAGE, COOLING FAN; HOFFMAN A-PA10AXFN
25	1	GRILLE, EXHAUST; HOFFMAN A-EXGR10
26	1	ADAPTER, OPERATOR; HOFFMAN A-21ABVA
27	1	SWITCH, PUSHBUTTON; ALLEN-BRADLEY 800T-A2A2
28	1	HORN, ALARM; EDWARDS 120VAC
29	2	INDICATOR; ALLEN BRADLEY 800T-PL16A

REVISIONS						ENGINEERING RECORD			
NO.	DESCRIPTION	BY	DATE	CHK	DATE	SCALE	1 1/2" = 1'-0"	DATE	DATE
0	FOR CONSTRUCTION	JW	3-4-95			JW	1-9-95		
1	ADDED VFD ISOLATION XMR	JW	4-7-95			JW	1-9-95		
2	RECORD	JW	7-4-95			JW	1-9-95		
3	FIELD MODIFICATIONS	CAP	8-1-95			JW	1-9-95		

Artech ENVIRONMENTAL SYSTEMS	PREPARED FOR ROY F. WESTON, INC.
	CLIENT JOB:
REMOTE CONTROL PANEL ASSY AFTERBURNER	
APPROVED	DWG. #: RCP120-1 REVISION 3

BILL OF MATERIAL

ITEM	QTY	DESCRIPTION
1	1	CONTROLLER, AC MOTOR; RELIANCE 2GU41005
2	1	STARTER, MOTOR; ALLEN-BRADLEY 509-AOD-90-90
3	3	ELEMENT, HEATER; ALLEN-BRADLEY W38 (2.51 A)
4	1	TRANSFORMER, CONTROL; ALLEN-BRADLEY 1497-N43
5	18	RELAY, CONTROL; ALLEN-BRADLEY 700-MA33A1-4
6	2	RELAY, TIME DELAY; ALLEN-BRADLEY 700-HR52TA17
7	1	SUPPLY, POWER; MOORE IND DPS/2400/240MA/UTDIN
8	1	SWITCH, DISCONNECT; ALLEN-BRADLEY 1494V-DS30
9	1	ROD, CONNECTING; ALLEN-BRADLEY 1494V-RA2
10	1	HANDLE, SWITCH; ALLEN-BRADLEY 1494V-H1
11	1	BLOCK, FUSE; ALLEN-BRADLEY 1494V-FS30
12	1	CLIPS, FUSE; ALLEN-BRADLEY 1401-N41
13	2	BLOCK, POWER DISTRIB; ALLEN-BRADLEY 1492-PD3141
14	8	BLOCK, FUSE; ALLEN-BRADLEY 1492-UF8
15	1	BREAKER, CIRCUIT; ALLEN-BRADLEY 1492-GH150 (15 A)
16	20	SOCKET, RELAY; ALLEN-BRADLEY 700-HN126
17	1	SOCKET, RELAY; ALLEN-BRADLEY 700-HN126
18	68	BLOCK, TERMINAL; ALLEN-BRADLEY 1492-F3
19	39	BLOCK, TERMINAL; ALLEN-BRADLEY 1492-F1
20	2	BARRIER, END; ALLEN-BRADLEY 1492-N18
21	6	ANCHOR, END; ALLEN-BRADLEY 1492-N23
22	A/R	RAIL, MOUNTING; ALLEN-BRADLEY 1492-N22
23	A/R	RAIL, MOUNTING; ALLEN-BRADLEY 100-DR1
24	3	FUSE; TYPE H, 30 AMP
25	3	FUSE; 13/32" x 1 1/2", 15 AMP
26	3	FUSE; 13/32" x 1 1/2", 10 AMP
27	2	FUSE; 13/32" x 1 1/2", 5 AMP
28	1	CURRENT SENSING RELAY WIELAND CSR 4-20mA

REVISIONS

NO	DESCRIPTION	BY	DATE	CHKD	DATE
0	FOR CONSTRUCTION	JW	3-6-95		
1	REVISED CR-110 & TERM 43	JW	4-27-95		
2	RECORD	JW	7-6-95		
3	FIELD MODIFICATIONS	CAP	8/1/96	CP	8/1/96

ENGINEERING RECORD

SCALE	DATE	CHKD	DATE
3"=1'-0"	1-9-95		



PREPARED FOR
ROY F. WESTON, INC

CLIENT JOB

REMOTE CONTROL PANEL ASSY
AFTERBURNER

APPROVED

DWG. # RCP120-2 REVISION 3

INDUCED DRAFT (I.D.) FAN

<u>DRAWING NO.:</u>	<u>REV. NO.:</u>	<u>DRAWING DATE</u>	<u>DRAWING DESCRIPTION</u>
195978-1 (SHEET 1)	-	11/11/94	DESIGN 16A INDUSTRIAL ARRANGEMENT NO. 1 & SISW CLASSES II & III FIXED DISCHARGE - SI
195978-1 (SHEET 2)	-	-	DESIGN 16A ACCESSORIES
195978-2	-	11/11/94	INSULATION STUD

①

INDUCED DRAFT (I.D.) FAN

(I.D.) FAN

DRAWING DESCRIPTION

IGN 16A INDUSTRIAL FANS
ANGEMENT NO. 1 & 9
V CLASSES II & III
ED DISCHARGE - SIZES 11 thru 21

IGN 16A
ESSORIES

ULATION STUD

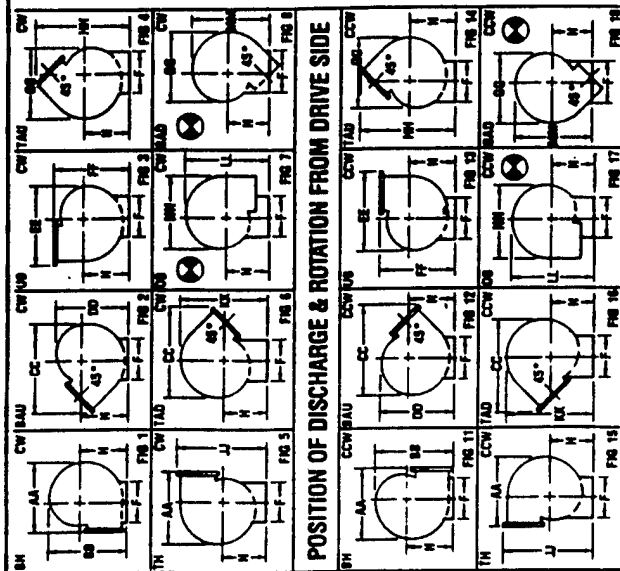
2

Technical drawing of a 16-G-1028 flanged outlet det. showing three views: Side Elevation (drive side), Front Elevation, and Foundation (plan).

Side Elevation (drive side): Shows the drive side of the unit. Dimensions include: D'_{min} (total width), E (height), C (width of the main body), D (width of the base), F (height of the base), H (width of the base), B (width of the top flange), W (width of the top flange), A_{min} (height of the top flange), and G (height of the top flange). A note indicates: "SEE DWG 16-G-1028 FOR FLANGED OUTLET DET.".

Front Elevation: Shows the front view of the unit. Dimensions include: K (total width), L (width of the base), J (height of the base), M (width of the base), N_{min} (height of the base), P (width of the top flange), and G_{min} (height of the top flange).

Foundation (plan): Shows the foundation plan of the unit. Dimensions include: P (width of the top flange), U (width of the top flange), F (width of the top flange), R (width of the top flange), S (width of the top flange), P' (width of the top flange), F (width of the top flange), and Q (width of the top flange). A note indicates: "SIZES 11 THRU 21 8 HOLES 'V' DIA.".



FAN SIZE	WHL DIA.	SHAFT DIA.		KEYWAY SIZE			A	B	C	D	D'	E	F	F'	G	H	K	L	M	N	P	P'	Q +
		CL II	CL III	CL II	CL III																		
11	19 3/8	1 7/16	1 11/16	3/8 x 3/16	3/8 x 3/16	10 5/8	14 1/16	13 1/16	15 3/16	18 1/2	15	16 1/8	13 1/2	11	20	26 1/16	4	17 3/8	9 5/16	1 1/2	1 5/8	5 17/32	
13	22 5/8	1 7/16	1 11/16	3/8 x 3/16	3/8 x 3/16	12 5/8	17 1/16	15 1/16	18 1/16	20 1/2	17 1/8	17 1/8	17	13	23	32 1/16	4 1/2	22 1/8	11 1/16	2	2 1/8	6 33/32	
15	26 1/8	1 5/8	2 3/16	1/2 x 1/4	1/2 x 1/4	14 1/2	19 3/16	17 1/16	21 1/16	23 1/4	19 1/8	18 1/8	18 1/2	15	26	35 3/8	5 1/2	23 1/2	12 3/4	2	2 1/8	7 1/2	
17	29 3/8	1 5/8	2 3/16	1/2 x 1/4	1/2 x 1/4	16 1/16	22 1/16	19 1/16	24 3/16	27	22 1/4	20 1/8	21	17	29	38 3/8	5 1/2	25 1/8	14 3/8	2	2 1/8	8 5/16	
19	33	2 3/16	2 7/16	5/8 x 1/2	5/8 x 1/2	18 1/4	24 1/2	22 1/2	26 1/2	28 1/2	24 1/16	22 1/4	23	19	32	41 3/8	5 3/4	27 3/8	16	2	2 1/8	9 1/8	
21	36 1/2	2 3/16	2 7/16	1/2 x 1/4	1/2 x 1/4	20 3/16	27 1/16	24 7/16	29 1/16	29 3/8	27 1/8	24 1/4	25	21	35	42 1/4	5 3/4	27 3/8	17 1/16	2	2 1/8	9 31/32	

FAN SIZE	R	S	T	U	V	W	LS WHEEL* AM WHEEL		AA	BB	CC	DD	EE	FF	GG	HH	JJ	KK	LL	MM	NN
							J	J													
11	8 $\frac{3}{32}$	10 $\frac{1}{2}$	7 $\frac{1}{32}$	4 $\frac{1}{2}$	9 $\frac{1}{8}$	6 $\frac{1}{16}$	8 $\frac{3}{32}$ *	7 $\frac{23}{32}$	30 $\frac{1}{16}$	34 $\frac{7}{16}$	38%	33 $\frac{3}{4}$	32%	35	30 $\frac{1}{4}$	43 $\frac{1}{2}$	38%	36 $\frac{1}{2}$	35 $\frac{3}{16}$	35%	31 $\frac{1}{8}$
13	9 $\frac{1}{32}$	15 $\frac{1}{4}$	7 $\frac{1}{16}$	7 $\frac{1}{16}$	9 $\frac{1}{8}$	7 $\frac{1}{4}$	9 $\frac{7}{32}$ *	8 $\frac{1}{4}$	36 $\frac{1}{8}$	40 $\frac{1}{8}$	45 $\frac{1}{4}$	39 $\frac{1}{4}$	38%	40 $\frac{7}{16}$	35%	50 $\frac{1}{16}$	44%	42 $\frac{1}{2}$	41 $\frac{1}{16}$	40%	36 $\frac{1}{8}$
15	9 $\frac{1}{8}$	16 $\frac{1}{2}$	8 $\frac{3}{16}$	8 $\frac{3}{16}$	9 $\frac{1}{8}$	8 $\frac{1}{4}$	10 $\frac{1}{8}$ *	9 $\frac{9}{16}$	41%	45%	51%	44%	43%	45 $\frac{1}{2}$	41	57 $\frac{1}{4}$	50%	48%	47 $\frac{1}{8}$	46 $\frac{1}{2}$	42%
17	10 $\frac{1}{16}$	18 $\frac{1}{8}$	9 $\frac{1}{8}$	9 $\frac{1}{8}$	9 $\frac{1}{8}$	9%	11 $\frac{1}{16}$	10 $\frac{1}{2}$	46 $\frac{1}{8}$	51 $\frac{1}{8}$	58%	50	49%	51 $\frac{1}{2}$	46 $\frac{1}{4}$	64 $\frac{1}{16}$	56%	54 $\frac{1}{4}$	53%	52%	47%
19	11 $\frac{1}{2}$	20 $\frac{3}{8}$	10 $\frac{1}{4}$	10 $\frac{1}{4}$	9 $\frac{1}{8}$	10 $\frac{1}{2}$	12	11 $\frac{1}{2}$	51%	56 $\frac{1}{2}$	64%	55%	54%	56 $\frac{1}{4}$	51%	70 $\frac{1}{2}$	62 $\frac{1}{4}$	60 $\frac{1}{8}$	58%	57 $\frac{1}{16}$	53%
21	12 $\frac{1}{32}$	20 $\frac{3}{4}$	11 $\frac{1}{4}$	11 $\frac{1}{4}$	9 $\frac{1}{8}$	11%	14 $\frac{1}{32}$	13%	56 $\frac{1}{4}$	62 $\frac{1}{8}$	71%	60%	60%	62 $\frac{1}{2}$	56%	77%	68%	66	64 $\frac{1}{16}$	63%	58 $\frac{1}{2}$

FAN SIZE	MAXIMUM MOTOR										ARRANGEMENT 9 DRIVE CENTERS															
	T-FRAMES		U-FRAMES		FRAME 56		FRAME 143-145		FRAME 182-184		FRAME 213-215		FRAME 254-256		FRAME 284-286		FRAME 324-326		FRAME 364-365							
	ODP & TEFC	ODP	TEFC	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.					
11	215T	215	215	14.7	16.8	14.7	16.8	15.8	17.8	16.5	18.6															
13	256T	286U	284U	15	17.2	15	17.2	16	18.1	16.5	19	17.3	20		17.8	20.8										
15	284T	286U	286U	17	19.2	17	19.2	18	20.1	18.5	21	19.3	22		19.8	22.8										
17	324T	364U	364U	18.7	21	18.7	21	19.6	21.8	20.2	22.3	21	23.7	21	24.4	24.4		25.7	23	26.7						

FAN SIZE	R	S	T	U	V	W	J	J	LS WHEEL* AM WHEEL
13	22%	17%	11%	4 1/2	9/16	8 1/16	7 3/32	8 3/32	7 3/32
15	26%	19%	13%	5 1/2	1 1/8	9 1/16	8 1/16	9 1/16	8 1/16
17	29%	22%	16%	6 1/2	1 1/4	10 1/16	9 1/16	10 1/16	9 1/16
19	33%	25%	19%	7 1/2	1 3/8	11 1/16	10 1/16	11 1/16	10 1/16
21	36 1/2%	28%	22%	8 1/2	1 7/8	12 1/16	11 1/16	12 1/16	11 1/16

*FOR TYPE "C" SPARK RESISTANT CONSTRUCTION 200°F. AND ABOVE, ADD 3/8" TO DIMENSIONS SHOWN.

FAN SIZE	R	S	T	U	V	W	J	J	LS WHEEL* AM WHEEL
11	8 3/32	10 1/2	7 1/8	4 1/2	9/16	8 1/16	7 3/32	8 3/32	7 3/32
13	9 3/32	15 1/2	7 1/8	5 1/2	1 1/8	9 1/16	8 1/16	9 1/16	8 1/16
15	9 7/8	16 1/2	8 3/8	6 1/2	1 1/4	10 1/16	9 1/16	10 1/16	9 1/16
17	10 1/16	18 1/2	9 3/8	7 1/2	1 3/8	11 1/16	10 1/16	11 1/16	10 1/16
19	11 1/2	20 1/2	10 1/4	8 1/2	1 7/8	12 1/16	11 1/16	12 1/16	11 1/16
21	12 1/32	20 3/4	11 1/4	9 1/2	2 1/8	14 1/32	13 1/32	14 1/32	13 1/32

FAN SIZE	MAXIMUM MOTOR				ARRANGEMENT 9 DRIVE CENTERS															
	T-FRAMES		U-FRAMES		FRAME 56		FRAME 143-145		FRAME 182-184		FRAME 213-215		FRAME 254-256		FRAME 284-286		FRAME 324-326		FRAME 364-366	
	ODP & TEFC	ODP	TEFC		MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.
11	215T	215	215		14.7	16.8	14.7	16.8	15.8	17.8	16.5	18.6								
13	256T	286U	284U		15	17.2	15	17.2	16	18.1	16.5	19	17.3	20	17.8	20.8				
15	284T	286U	286U		17	19.2	17	19.2	18	20.1	18.5	21	19.3	22	19.8	22.8				
17	324T	364U	364U		18.7	21	18.7	21	19.6	21.8	20.2	22.3	21	23.7	21.4	24.4	22.4	25.7	23	26.7
19	326T	365U	365U		20.6	22.9	20.6	22.9	21.5	23.7	22	24.6	22.9	25.6	23.3	26.3	24.1	27.6	24.8	28.6
21	326T	365U	365U		22.8	25.1	22.8	25.1	23.6	25.9	24.2	26.7	24.9	27.8	25.3	28.4	26.5	29.9	26.8	30.7

PERFORMANCE											
MOTOR DATA											
ITEM NO.	IDENTIFICATION	ARRG'T	NO. REQ'D	FAN SIZE	FIG. NO.	WHL. TYPE	CL	C.F.M.	O.V.	S.P.	R.P.M.
1	SN195978	9SR	1	13	5	LS	3	2250	2445	2.5	1545
	Tag: Arrtech Job IJ-120							Den. .027 Elv. up to 7000'			

DRIVE DATA				MOTOR DATA				OPTIONAL ACCESSORIES			
ITEM NO.	SLIDE BASE 7-2-94	MTR PULLEY/FAN PULLEY	BELTS	CENTER	MOTOR POS.	WHL. TYPE	VIBR. BASE TYPE	PADS TYPE	OPTIONAL ACCESS.	TEMP.	ELEV.
1	7				9SR			A, E, D, L, Q, H		650	
								R, G, S, P, W, F			

NOTES

Dwg. 16-0-1026 must accompany customer dwg.

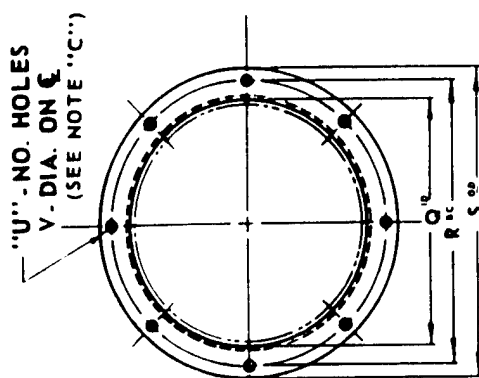
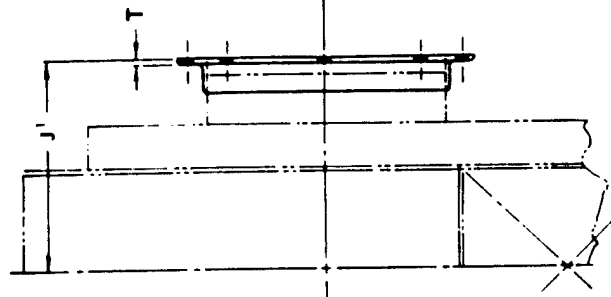
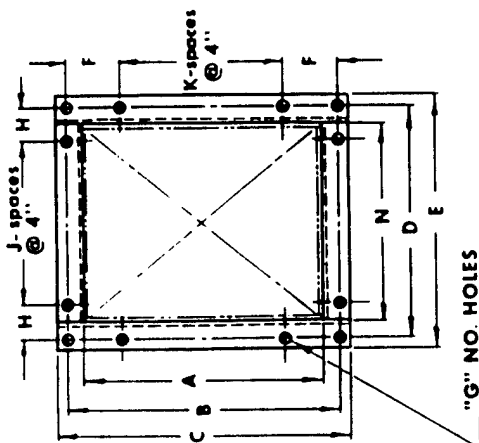
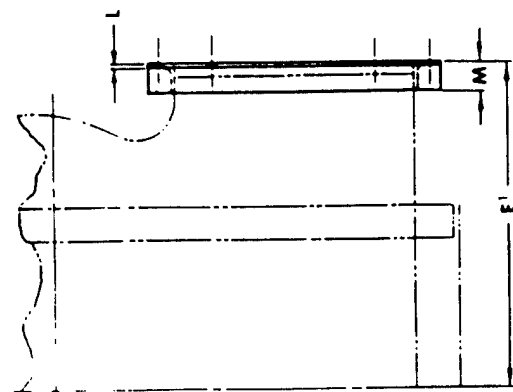
Flanged outlet is not std. on DB & BAD units. When flanged outlet (punched) is required on DB (Fig. 7 & 17) or BAD (Fig. 8 & 18) units, See Dwg. 16-0-1027 for

CUSTOMER Arrtech Environmental Systems

Tulsa, Ok.

P.O.# IJ120-0023

Note: Outlet Flange is furnished as Std. on all D/16A Fans.



OUTLET FLANGE PUNCHING

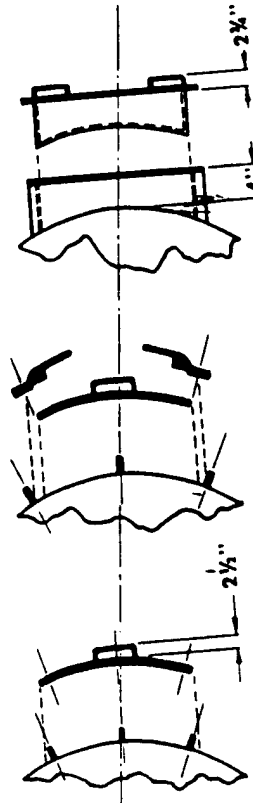
All Sizes Except DB & BAD Sizes 23 - 45
See 16-0-1021 (BAD), 16-0-1022 (DB)

NOTE D

FAN SIZE	OUTLET FLANGE (DIMENSIONS — INCHES)															INLET FLANGE (DIM. — INCHES)									
	A	B	C	D	E	E'	F	G	H	J	K	L	M	N	P	J'		Q	R	S*	T GA.	U	V		
																LS	AM								
11	10-5/8	12-3/8	13-5/8	11-1/16	12-5/16	15	4-3/16	10	5-17/32	0	1	3/16	1-1/2	9-5/16	1/2	8-19/32	NA	11-1/8	12-1/2	13-5/8	1/8	8	3/8		
13	12-5/8	14-3/8	15-5/8	12-13/16	14-1/16	17-7/16	5-3/16	12	4-13/32	1	1	1/2	1-1/2	11-1/16	1/2	9-23/32	1/2	13-3/16	14-13/16	16-3/16	1/8	12	7/16		
15	14-1/2	16-1/4	17-1/2	14-1/2	15-3/4	19-7/8	4-1/8	14	5-1/4	1	2	1/2	2	12-3/4	5/8	10-5/8	1/2	15-3/16	16-13/16	18-3/16	1/8	16	1/2	1/2	
17	16-7/16	18-3/16	19-7/16	16-1/8	17-3/8	22-1/4	5-3/32	16	4-11/16	2	2	1/2	2	14-3/8	1/2	11-9/16	1/2	17-3/16	19-1/8	20-3/16	3/16	16	1/2	1/2	
19	18-1/4	20	21-1/4	17-3/4	19	24-11/16	4	18	4-7/8	2	3	1/2	2	16	1/2	12-1/2	1/2	19-3/16	21-1/8	22-3/16	1/2	16	1/2	1/2	
21	20-3/16	21-15/16	23-3/16	19-7/16	20-11/16	27-1/8	4-31/32	20	3-23/32	3	3	1/2	1-1/2	17-11/16	1/2	14-17/32	1/2	21-3/16	23-1/8	24-3/16	1/2	20	1/2	1/2	
23	22-1/8	24-3/8	26-1/8	21-9/16	23-5/16	30-1/8	4-3/16	22	4-25/32	3	4	1/2	2	19-5/16	5/8	16-5/32	1/2	23-3/16	25-1/8	26-3/16	1/2	20	7/16	1/2	
26	24-15/16	27-3/16	28-15/16	24-7/16	26-3/16	33-11/16	5-19/32	24	4-7/32	4	4	1/2	2	22-3/16	1/2	17-23/32	1/2	26-3/16	28-1/2	30-3/16	1/2	24	9/16	1/2	
29	27-3/4	30	31-3/4	26-3/4	28-1/2	37-1/2	5	26	5-3/8	4	5	1/2	2	24-1/2	1/2	18-23/32	1/2	29-3/16	31-1/2	33-3/16	1/2	24	1/2	1/2	
33	31-3/4	34	35-3/4	29-15/16	31-11/16	42-7/16	5	30	4-31/32	5	6	1/2	2	27-11/16	1/2	20-13/32	1/2	33-3/16	35-3/8	37-3/16	1/2	16	9/16	1/2	

13	12-5/8	14-3/8	15-5/8	12-13/16	14-1/16	17-7/16	5-3/16	12	4-13/32	1	1	↑	↑	↑	11-1/16	↑	9-23/32	↑	13-3/16	14-13/16	16-3/16	1/8	12	7/16
15	14-1/2	16-1/4	17-1/2	14-1/2	15-3/4	19-7/8	4-1/8	14	5-1/4	1	2				12-3/4		10-5/8		15-3/16	16-13/16	18-3/16	1/8	16	↑
17	16-7/16	18-3/16	19-7/16	16-1/8	17-3/8	22-1/4	5-3/32	16	4-1/16	2	2				14-3/8		11-9/16		17-3/16	19-1/8	20-3/16	3/16	16	
19	18-1/4	20	21-1/4	17-3/4	19	24-11/16	4	18	4-7/8	2	3				16		12-1/2		19-3/16	21-1/8	22-3/16	↑	16	
21	20-3/16	21-15/16	23-3/16	19-7/16	20-11/16	27-1/8	4-31/32	20	3-23/32	3	3				1-1/2	17-11/16	1/2	14-17/32	NA	21-3/16	23-1/8	24-3/16	20	↑
23	22-1/8	24-3/8	26-1/8	21-9/16	23-5/16	30-1/8	4-3/16	22	4-25/32	3	4				2	19-5/16	5/8	16-5/32	15-5/8	23-3/16	25-1/8	26-3/16	20	7/16
26	24-15/16	27-3/16	28-15/16	24-7/16	26-3/16	33-11/16	5-19/32	24	4-7/32	4	4				↑	22-3/16	↑	17-23/32	17-1/8	26-3/16	28-1/2	30-3/16	24	9/16
29	27-3/4	30	31-3/4	26-3/4	28-1/2	37-1/2	5	26	5-3/8	4	5					24-1/2		18-23/32	18-1/16	29-3/16	31-1/2	33-3/16	24	↑
33	31-3/4	34	35-3/4	29-15/16	31-11/16	42-7/16	5	30	4-31/32	5	6				↓	27-11/16		20-13/32	19-21/32	33-3/16	35-3/8	37-3/16	16	9/16
37	35-1/2	37-3/4	39-1/2	33-1/4	35	47-5/16	4-7/8	34	4-5/8	6	7				2	31		23-11/16	22-27/32	37-3/16	39-1/2	41-3/16	↑	5/8
41	39-1/4	42	44-1/4	37-1/4	39-1/2	52-9/16	5	38	4-5/8	7	8				2-1/2	34-1/2	↑	25	23-3/4	41-3/16	43-7/8	45-3/16	↑	3/4
45	43-1/16	45-13/16	48-1/16	40-1/2	42-3/4	57-1/2	4-29/32	42	4-1/4	8	9				3/16	2-1/2	5/8	—	25-17/32	45-3/16	47-7/8	49-3/16	16	3/4

CLEANOUT DOORS

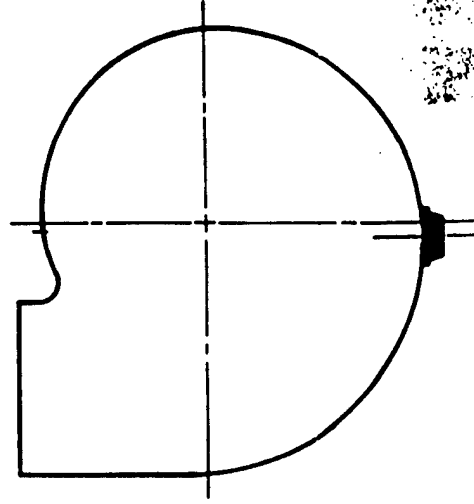


BOLTED TYPE CLAMP TYPE PLUG TYPE

Cleanout door locations must be specified on order by "o'clock" position. These locations are as viewed from drive side and doors are symmetrical on o'clock center-line.

On units with horizontal split housings 3:00 and 9:00 o'clock positions are prohibited.

DRAIN OPENING



DRAIN CONNECTION IS 1 1/2" NPT HALF COUPLING AND IS LOCATED AT LOWEST POINT ON SCROLL.

FAN SIZE	SIZE OPENING			PLUG TYPE
	BOLTED TYPE	CLAMP TYPE		
11, 13,	6 x 10	6 x 10		8
15	10 x 10	10 x 10		8
17	10 x 10	10 x 10		12
19	10 x 10	10 x 10		12
21	10 x 10	10 x 10		12
23	14 x 14	10 x 10		12
26	14 x 14	10 x 16		18
29	14 x 14	16 x 16		22
33	20 x 20	16 x 16		22
37, 41, 45	20 x 20	22 x 22		22

- NOTES:
- A. OUTLET FLANGES ARE FURNISHED PUNCHED AS STANDARD
 - B. INLET FLANGES ARE FURNISHED PUNCHED AS STANDARD
 - C. FOR TYPE 'C' SPARK RESIST. CONSTRUCTION USE VALUES FOR TYPE 'C' FLANGES.



BOLTED TYPE CLAMP TYPE PLUG TYPE

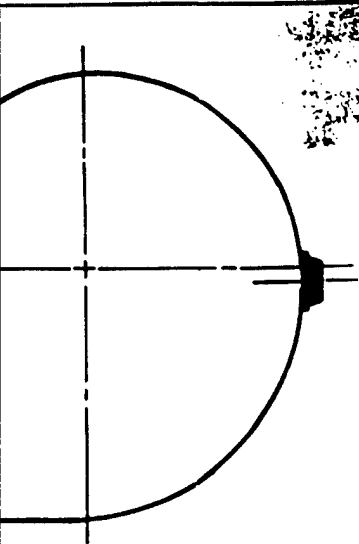
Cleanout door locations must be specified on order by "o'clock" position. These locations are as viewed from drive side and doors are symmetrical on o'clock centerline.

On units with horizontal split housings 3:00 and 9:00 o'clock positions are prohibited.

NOTES:

- A. OUTLET FLANGES ARE FURNISHED PUNCHED AS STANDARD
 - B. INLET FLANGES ARE FURNISHED PUNCHED AS STANDARD
 - C. FOR TYPE 'C' SPARK RESIST. CONSTRUCTION USE VALUES FOR TYPE L.S. WHEEL
 - D. FOR TYPE 'C' SPARK RESISTANT CONSTRUCTION AT 200° F AND ABOVE, ADD 3/8" TO DIMENSION SHOWN.
- FAN SIZES 11-15 ONLY

17	10 x 10	10 x 10	10 x 10	12
19	10 x 10	10 x 10	10 x 10	12
21	10 x 10	10 x 10	10 x 10	12
23	14 x 14	10 x 10	10 x 10	12
26	14 x 14	10 x 16	10 x 16	18
29	14 x 14	16 x 16	16 x 16	22
33	20 x 20	16 x 16	16 x 16	22
37, 41, 45	20 x 20	22 x 22	22 x 22	22



DRAIN CONNECTION IS 1 1/2" NPT HALF COUPLING AND IS LOCATED AT LOWEST POINT ON SCROLL.

**DESIGN 16A
ACCESSORIES**

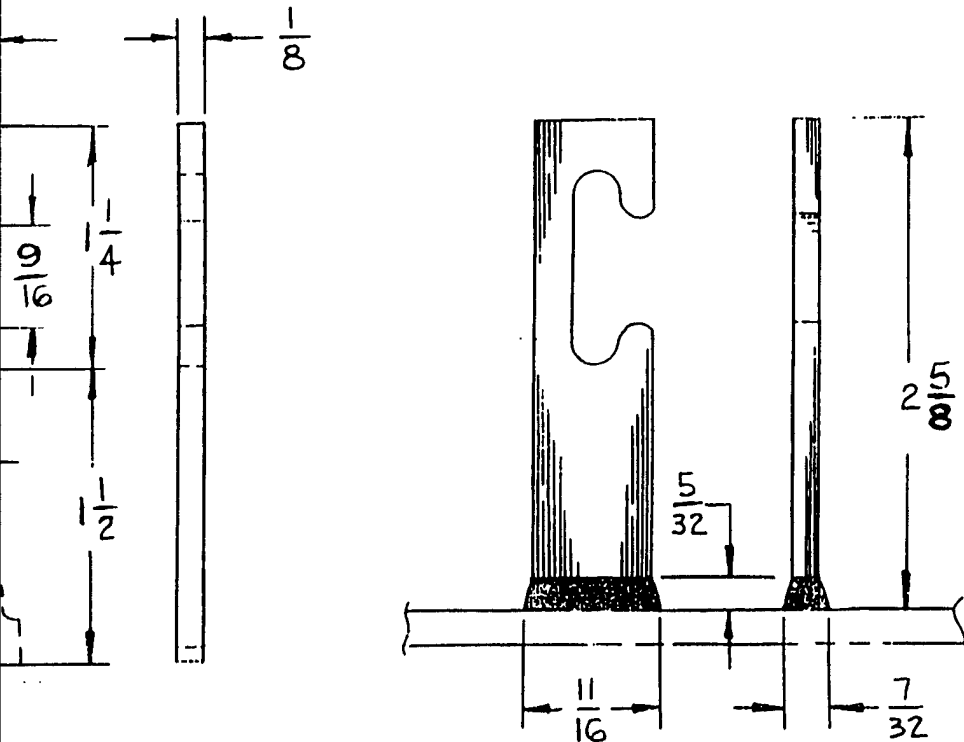


1675 GLEN ELLYN ROAD, GLENDALE HEIGHTS, IL 60139

DIMENSION TOLERANCE ± 1/8

16-0-1026S

3



INSULATION STUD



CHICAGO BLOWER CORPORATION
1675 GLEN ELLYN ROAD, GLENDALE HEIGHTS, ILL. 60137
PHONE A C 312 858-2600

FURNISHED FOR SALES PURPOSES-DIMENSIONS NOT CERTIFIED BY CBC	DATE	SUBMITTED BY	SALES OFFICE
	DATE	CBC ENGINEER	SO#
	DATE	CBC ENGINEER	DWG. NO.
DRAWING CERTIFIED BY CBC - FURNISHED FOR APPROVAL - NOT RE- LEASED FOR PRODUCTION	11/11/94	HS/jc	195978
DRAWING CERTIFIED BY CBC - APPROVAL NOT REQUIRED - RELEASED FOR PRODUCTION			195978-2

(2)

PROPANE DELIVERY SYSTEM

<u>DRAWING NO.:</u>	<u>REV. NO.:</u>	<u>DRAWING DATE</u>	<u>DRAWING DESCRI</u>
9508-112 (SHEET 1)	1	10/13/95	SITE PLAN
9508-112 (SHEET 2)	-	2/27/95	PIPING DIAGRAM
9508-112 (SHEET 3)	-	9/18/95	BILL OF MATERIA

①

PROPANE DELIVERY SYSTEM DRAWINGS

VERY SYSTEM DRAWINGS

DRAWING DESCRIPTION

ITE PLAN
PIPING DIAGRAM
BILL OF MATERIALS & GENERAL NOTES

(2)

Suburban Propane

WHIPPANY

ROY WESTON, INC. - WEST CHESTER, PA.
ALABAMA ARMY AMMUNITION PLANT - ALPINE, AL.

<u>DRAWING</u>	<u>NUMBER</u>	<u>SHEET</u>	<u>REV.</u>
SITE PLAN	9508-112	1	OF 3
PIPING DIAGRAM	9508-112	2	OF 3
BILL OF MATERIAL & GENERAL NOTES	9508-112	3	OF 3

①

**ban
ane**

NEW JERSEY

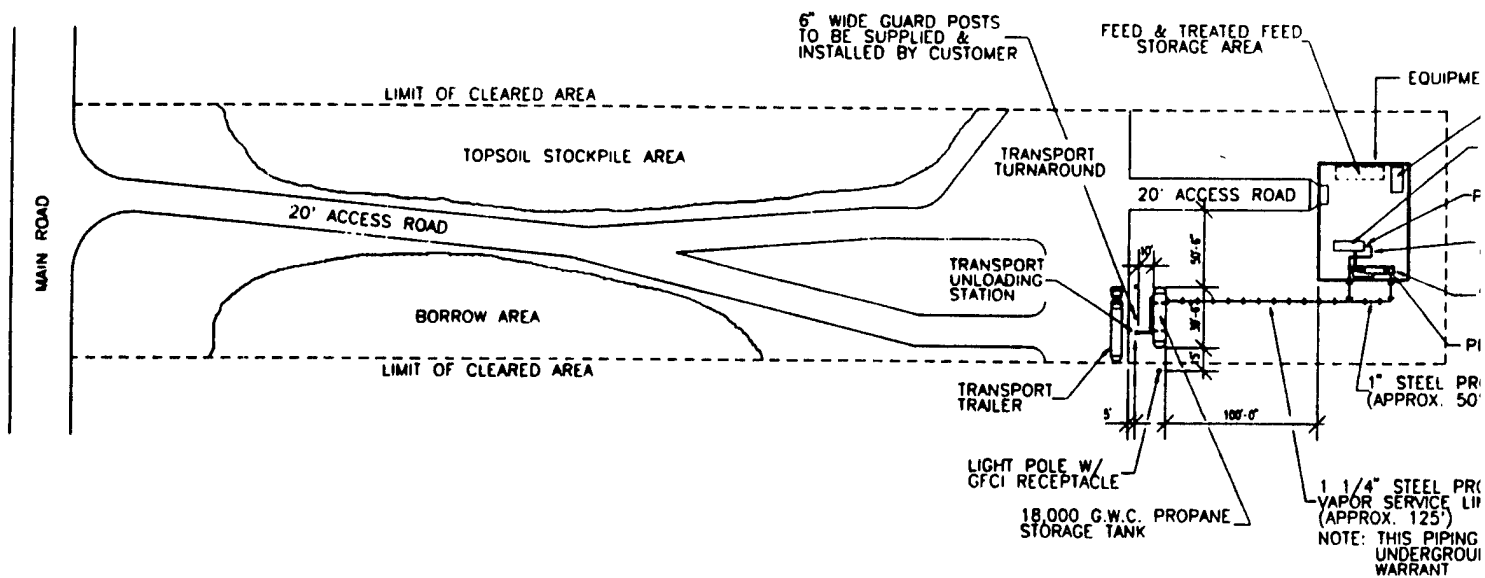
**ESTER, PA.
T - ALPINE, AL.**

MBER SHEET REV.

9-112 1 OF 3

9-112 2 OF 3

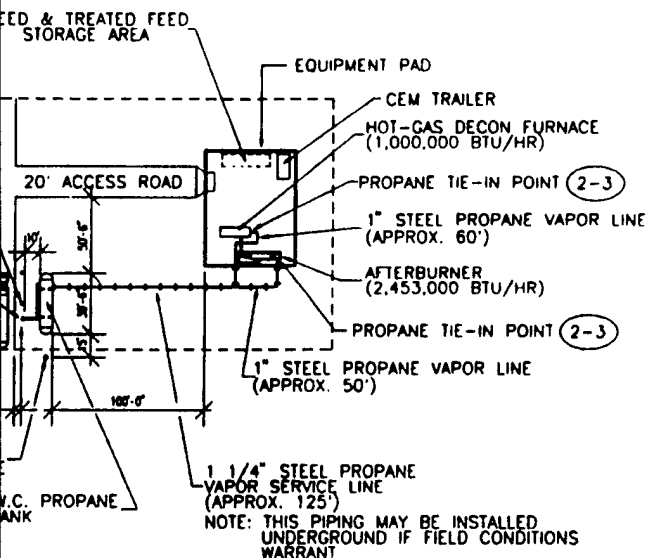
9-112 3 OF 3



SITE PLAN

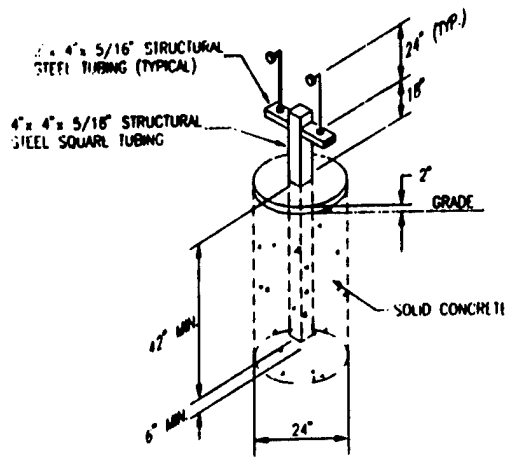
SCALE: 1" = 60'-0"

1

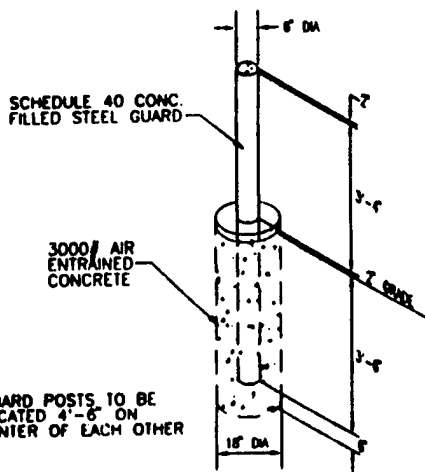


(2)

SUBURBAN PROPANE - WHIPPANY, N.J.		J. YAPACIA		REVISED PER ROY WESTON, INC. (NU HUNNA) COMMENTS	
SITE PLAN		DATE: 9-15-88			
ROY WESTON, INC. - WEST CHESTER, PA.		SCALE: 1" = 50'-0"			
ALABAMA ARMY AMMUNITION PLANT - ALPINE, AL		DRAWN BY: J. YAPACIA			
DWG. NO. 9508-112		Sheet 1 of 3			



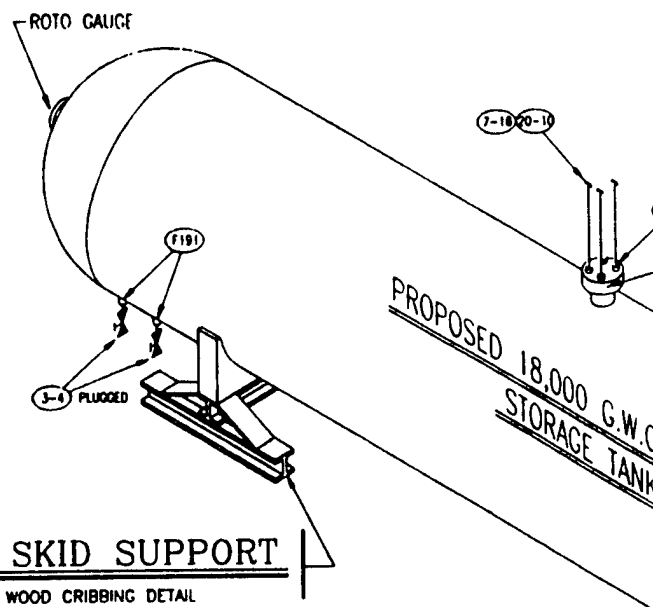
**BREAKAWAY
STANCHION DETAIL**
SCALE: NONE



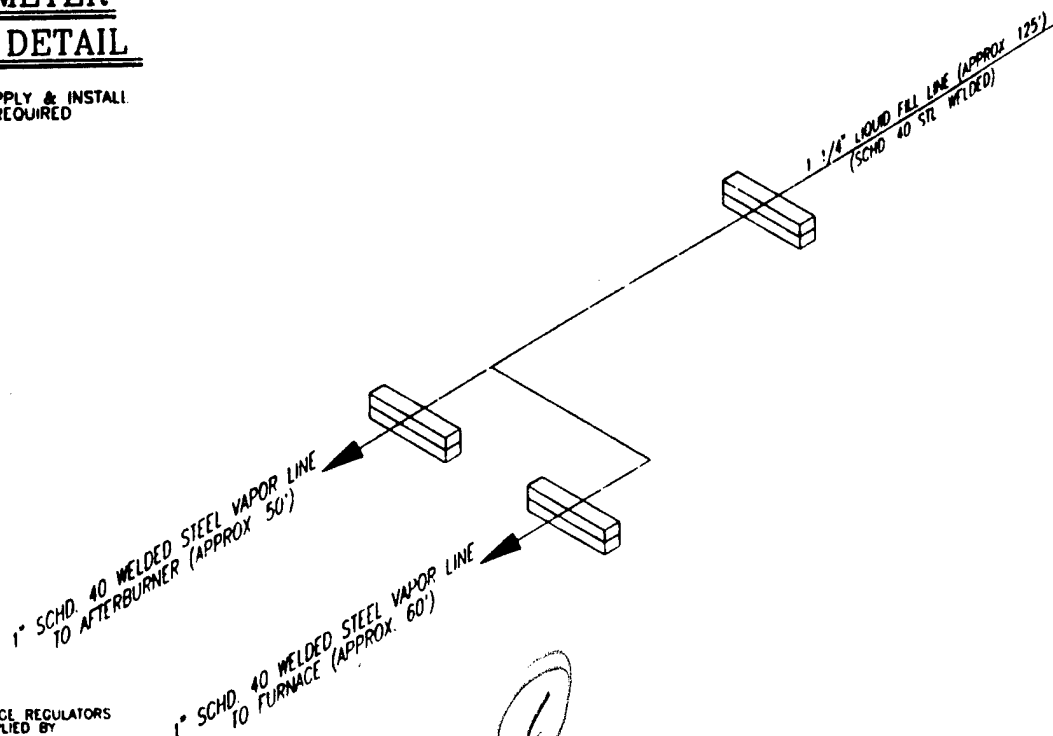
NOTE: GUARD POSTS TO BE
LOCATED 4'-6" ON
CENTER OF EACH OTHER

**TYP. 6" DIAMETER
GUARD POST DETAIL**
SCALE: NONE

NOTE: CUSTOMER TO SUPPLY & INSTALL
GUARD POSTS IF REQUIRED



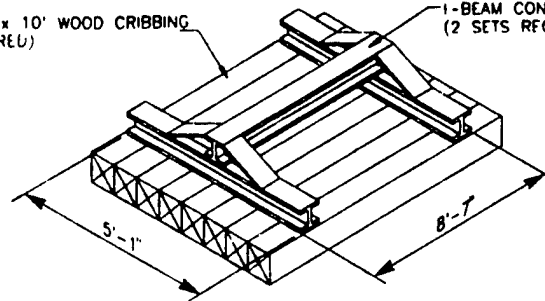
TANK SKID SUPPORT
SEE WOOD CRIBBING DETAIL



NOTE: SECOND STAGE REGULATORS
TO BE SUPPLIED BY
CUSTOMER

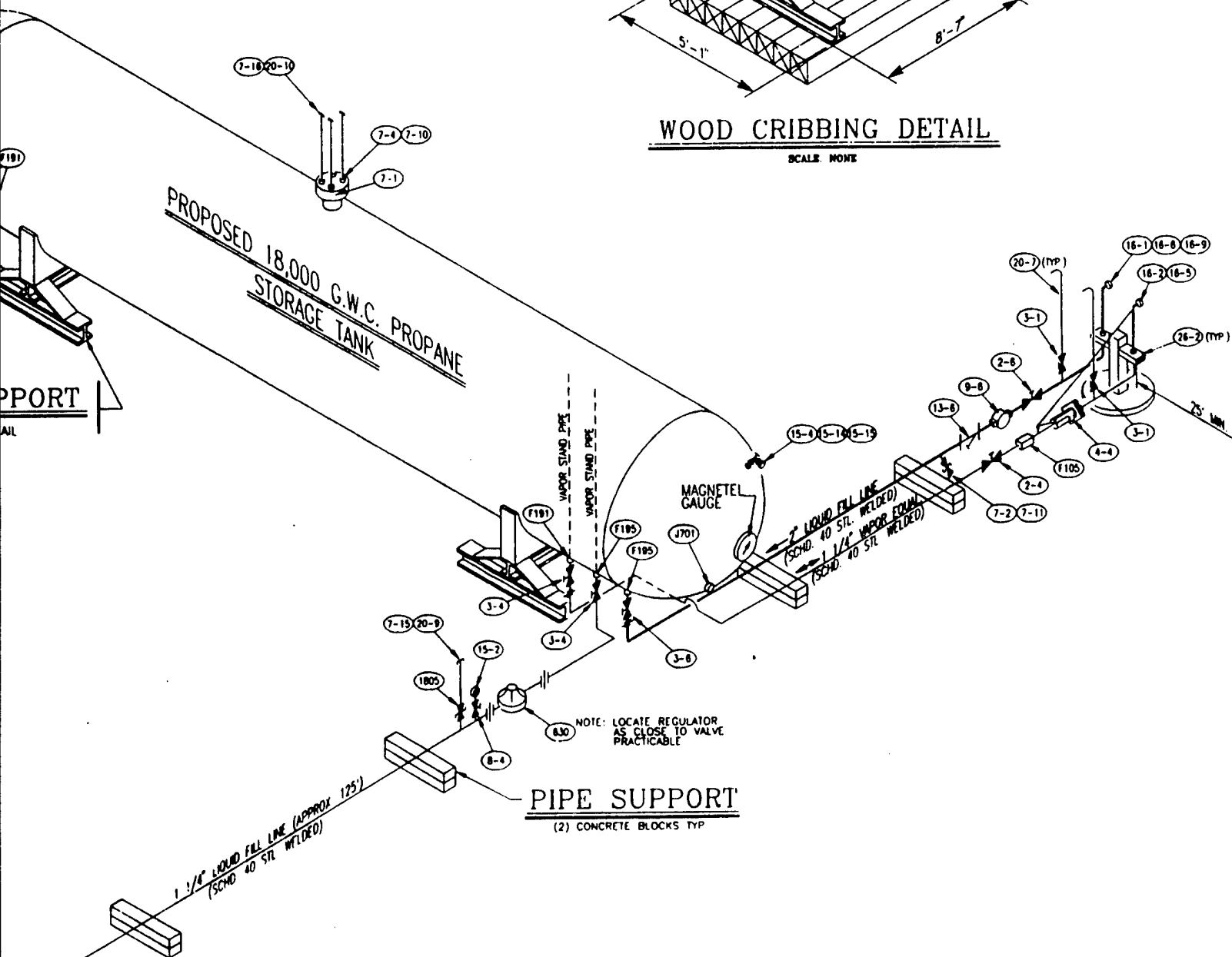
(8) 8" x 8" x 10' WOOD CRIBBING
(16 REQUIRED)

STEEL TANK SKID
1-BEAM CONSTRUCTION
(2 SETS REQUIRED)



WOOD CRIBBING DETAIL

SCALE: NONE



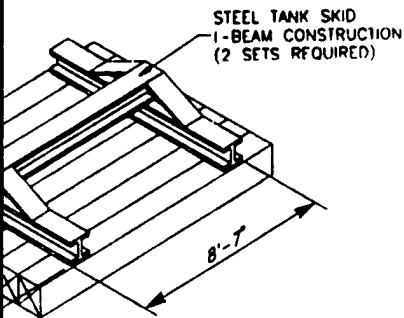
PIPING DIAGRAM

SCALE: NONE

NOTES

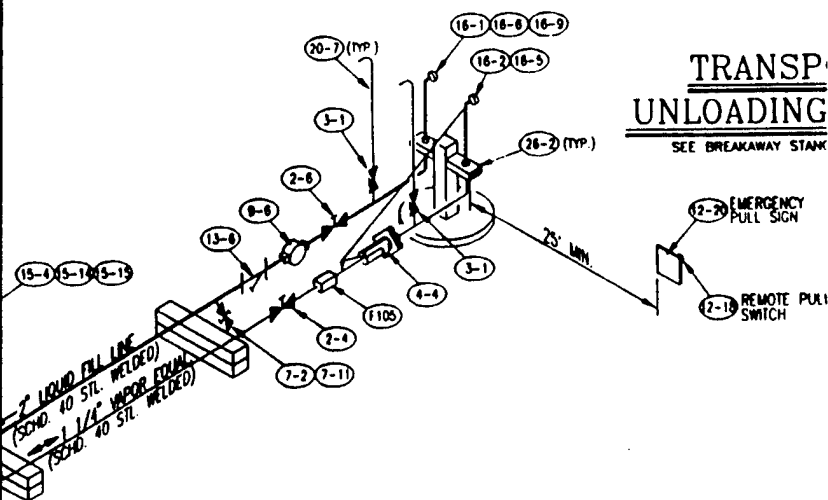
- 1) FOR ACTUAL LOCATION OF PROPANE STORAGE TANK, VAPORIZERS & TRANSPORT UNLOADING RISER SEE SITE PLAN DRAWING NO 9508-112 SHEET 1 OF 3
- 2) SEE BILL OF MATERIALS DRWG NO 9508-112 SH. 3 OF 3 FOR ALL MATERIAL SPECIFICATIONS & GENERAL NOTES

2



RIBBING DETAIL

SCALE: NONE



Suburban
Propane

NOTES

YAPOLA

SUBURBAN PROPANE - WHIPPANY, N.J.

PIPING DIAGRAM
ROY WESTON, INC. - WEST CHESTER, PA.
ALABAMA ARMY AMMUNITION PLANT - ALPINE, AL.

DWG. NO. 9508-112 Sheet 2 of 3

3

STEEL PIPE - GENERAL NOTES:

1) PIPE SPECIFICATIONS:

- BLACK WELDED & SEAMLESS PIPE ANSI/ASTM A53
- SEAMLESS CARBON STEEL PIPE ANSI/ASTM A106
- BLACK WELDED & SEAMLESS STEEL PIPE ANSI/ASTM A120

- 2) ALL ABOVEGROUND PIPE SHALL BE PRIMED AND PAINTED.
- 3) ALL UNDERGROUND PIPE SHALL BE X-TRU COATED OR EQUIVALENTLY WRAPPED (1MM FILM EPOXY-LI. GREEN)
- 4) ALL UNDERGROUND PIPING SHALL BE ELECTRICALLY ISOLATED AND CATHODICALLY PROTECTED WITH HIGH POTENTIAL MAGNESIUM ANODES
- 5) ALL UNDERGROUND PIPE JOINTS SHALL BE MASTIC COATED AND/OR WRAPPED WITH UNDERGROUND TAPE WRAP.
- 6) ALL ABOVEGROUND PIPE SHALL BE SECURELY SUPPORTED AND PROTECTED FROM PHYSICAL DAMAGE. SPACINGS OF A/G PIPE SUPPORTS SHALL NOT EXCEED THE FOLLOWING.

STEEL PIPE SIZE
(INCHES)

SPACING OF SUPPORTS
(FEET)

1/2"	6'
3/4" OR 1"	8'
1 1/4" OR LARGER (HORIZONTAL)	10'
1 1/4" OR LARGER (VERTICAL)	EVERY FLOOR LEVEL

- 7.) JOINT COMPOUND (PIPE DOPE) FOR ALL THREADED JOINTS SHALL BE LABELED FOR USE ON LP GAS AND LIQUID.
- 8.) ALL HIGH AND LOW PRESSURE FLANGE GASKETS SHALL BE ASBESTOS FIRE RATED OR WHEN REQUIRED NON ASBESTOS "GARLOCK" TYPE. FLANGED GASKETS SHALL BE RATED FOR THE GIVEN PRESSURE OF THE PIPELINE AND OR VALVE FLANGE.
- 9.) ALL PIPE WELDING SHALL MEET WITH THE LATEST A.P.I. STANDARD 1104.
- 10.) ALL HIGH PRESSURE PIPING SHALL BE SCHEDULE 80 WHEN THREADED OR SCHEDULE 40 OR 80 WHEN WELDED.
- 11.) ALL LOW PRESSURE PIPING SHALL BE AT LEAST SCHEDULE 40 WHEN THREADED OR WELDED.
- 12.) ALL HIGH PRESSURE FITTINGS SHALL BE FORGED STEEL RATED 600# OR GREATER. CAST IRON PIPE FITTINGS (ELLS, TEES, CROSSES, UNIONS, FLANGES OR PLUGS) SHALL NOT BE USED.
- 13.) ALL LOW PRESSURE FITTINGS SHALL BE RATED 250# OR GREATER MADE OF MALLEABLE IRON OR EQUIVALENT. CAST IRON PIPE FITTINGS (ELLS, TEES, CROSSES, UNIONS, FLANGES OR PLUGS) SHALL NOT BE USED.
- 14.) PRIOR TO PRESSURE TEST, PIPE SHALL BE CLEANED OF ALL FOREIGN MATERIAL.
- 15.) ALL NEW PIPING SHALL BE PRESSURE TESTED AFTER CONNECTIONS HAVE BEEN COMPLETED. PRESSURIZATION OF HIGH PRESSURE LINES WITH AIR OR NITROGEN TO 350 P.S.I.G. ALL LOW PRESSURE LINES WILL BE TESTED TO 50 P.S.I.G. HOLD PRESSURE ON SYSTEM FOR MINIMUM 15 MINUTES WHILE CHECKING ALL WELDS, THREADED JOINTS, VALVE PACKING JOINTS, ETC. WITH SOAP CHECK.
- 16.) ALL PIPE LEAVING TANK (MANWAY AND/OR OPENINGS) AREA SHALL INCORPORATE SWING JOINT ELLS TO RELIEVE PIPE STRESSES ON TANK FITTINGS. ADDITIONALLY, ANY PIPE SUBJECT TO MOVEMENT WITH RELATION TO ANY FIXED OBJECT MUST INCORPORATE SWING JOINT ELLS
- 17.) SUPPLY PIPE REDUCERS WHERE NECESSARY. (ONE PIECE CONCENTRIC WELD OR THREADED BUSHING TYPE).
- 18.) SUPPLY UNIONS WHERE NECESSARY FOR EASY REMOVAL OF EQUIPMENT (TAKE SPECIAL NOTE OF WHERE INSULATED UNIONS HAVE BEEN SPECIFIED)
- 19.) 6" DIAMETER CONCRETE FILLED SCHEDULE 40 STEEL GUARD POSTS TO BE INSTALLED WHERE NECESSARY (SUPPLIED BY CUSTOMER)
- 20.) INSTALLATION TO MEET THE FOLLOWING CODE REQUIREMENTS:
N.F.P.A. #58 AND N.F.P.A. PAMPHLET #70 COVERING
HAZARDOUS LOCATIONS CLASSIFICATIONS

①

BILL OF MATERIAL

SYMBOL	QTY	DESCRIPTION	INLET/OUTLET	PIPE SIZE	MANUFACTURER/ PART NO
2-3	2	BALL VALVE	UNION ENDS	1"	MARPAC CS-B790-TT
2-4	1	BALL VALVE	UNION ENDS	1 1/4"	MARPAC CS-B790-TT
2-6	1	BALL VALVE	UNION ENDS	2"	MARPAC CS-B790-TT
3-1	2	GLOBE VALVE	FNPT/FNPT	1/2"	FISHER N301-04
3-4	4	GLOBE VALVE	FNPT/FNPT	1 1/4"	FISHER N310-10
3-6	1	GLOBE VALVE	FNPT/FNPT	2"	FISHER N310-16
4-4	1	EMERGENCY VALVE	FNPT/FNPT	1 1/4"	REGO 7781AF
F191	3	EXCESS FLOW VALVE	MNPT	2 x 1 1/4"	FISHER F191-105GPM
F195	2	EXCESS FLOW VALVE	MNPT	3 x 2"	FISHER F195-280GPM
7-1	1	MULTIPOINT RELIEF VALVE	FLANGE	3"	REGO AB560
7-2	1	HYDRO. RELIEF VALVE	MNPT	1/2"	FISHER H144
7-4	3	TANK RELIEF VALVE	MNPT	2"	REGO A3149W6
7-10	3	PIPEWAY ADAPTOR	-	-	FISHER P104-24
7-11	1	RAIN CAP	-	1/2"	FISHER P208
7-15	1	RAIN CAP	-	2"	P770 - 2 3/8"
7-16	3	RAIN CAP	-	3"	P770 - 3 1/2"
8-4	1	NEEDLE VALVE	MNPT/FNPT	1/4"	V335
9-6	1	BACKCHECK VALVE	FNPT/FNPT	2"	REGO A7794
12-18	1	EMERG. PULL TO CLOSE	-	-	FISHER P184B W/ CABLE
12-20	1	EMERG. PULL SIGN	-	-	P-81
13-8	1	STRAINER	FNPT/FNPT	2"	PAGET PG200 (W280-16)
15-2	2	PRESSURE GAUGE (0-300#)	-	1/4"	FISHER J501 (GS30)
15-4	1	PRESSURE GAUGE (0-300#)	-	1/4"	FISHER J506 (GS300)
15-14	1	VENT/PRESSURE VALVE	MNPT/FNPT	3/4" x 1/4"	FISHER J415
15-15	1	SPT VENT	FNPT	1/4"	FISHER J400
16-1	1	ACME ADAPTOR	MACME/MNPT	3 1/4" x 2"	FISHER 503-16
16-2	1	ACME ADAPTOR	MACME/MNPT	3 3/4" x 1"	FISHER M216
16-5	1	BRASS CAP W/ CHAIN	FACME	1 3/4"	FISHER M229
16-6	1	STEEL CAP	FACME	3 1/4"	FISHER M443
16-9	1	CHAIN W/ HOOKS	-	-	FISHER P167
20-9	1	STAND PIPE	SCHD.40 GALV	2" x 7'	BY CONTRACTOR
20-10	3	STAND PIPE	SCHD.40 GALV	3" x 7'	BY CONTRACTOR
1805	1	RELIEF VALVE	FNPT/FNPT	2"	FISHER 1805-52
26-2	2	BREAKAWAY EAR	-	-	-
27-6	2	INSULATED UNION	FNPT/FNPT	2"	3000# (HIGH PRESSURE)
J701	1	6" THERMOMETER	MNPT	1/2"	FISHER J701
630	2	REGULATOR	FNPT/FNPT	2"	FISHER 630-104/78



DATE	9/18/95
SCALE	NONE
CHECKED	

SUBURBAN PROPANE - WHIPPANY, N.J.
BILL OF MATERIALS
 ROY WESTON, INC. - WEST CHESTER, PA.
 ALABAMA ARMY AMMUNITION PLANT - ALPINE, AL.
 JWC.NO. 9508-112 Sheet 3 of 3

MISCELLANEOUS HGD SYSTEM EQ

<u>DRAWING NO.:</u>	<u>REV. NO.:</u>	<u>DRAWING DATE</u>	<u>DRAWING DESCRIPTION</u>
400	1	8/3/96	HGD SYSTEM: GENER
401	1	7/25/96	HGD SYSTEM: SECTIO
1000	-	8/8/95	STACK MODIFICATION TESTING
1001	2	5/2/96	HGD SYSTEM: PROCE
1002	2	5/10/96	HGD SYSTEM: PIPING
C100	3	1/10/96	HGD SYSTEM: SITE L
C2000	3	9/6/96	HGD SYSTEM: OVERA
C2001	2	9/6/96	HGD SYSTEM: OVERA

MISCELLANEOUS HGD SYSTEM EQUIPMENT

HGD SYSTEM EQUIPMENT

DRAWING DESCRIPTION

HGD SYSTEM: GENERAL ARRANGEMENT PLAN

HGD SYSTEM: SECTIONS & DETAILS

STACK MODIFICATION TO SUPPORT EMISSIONS
TESTING

HGD SYSTEM: PROCESS FLOW DIAGRAM

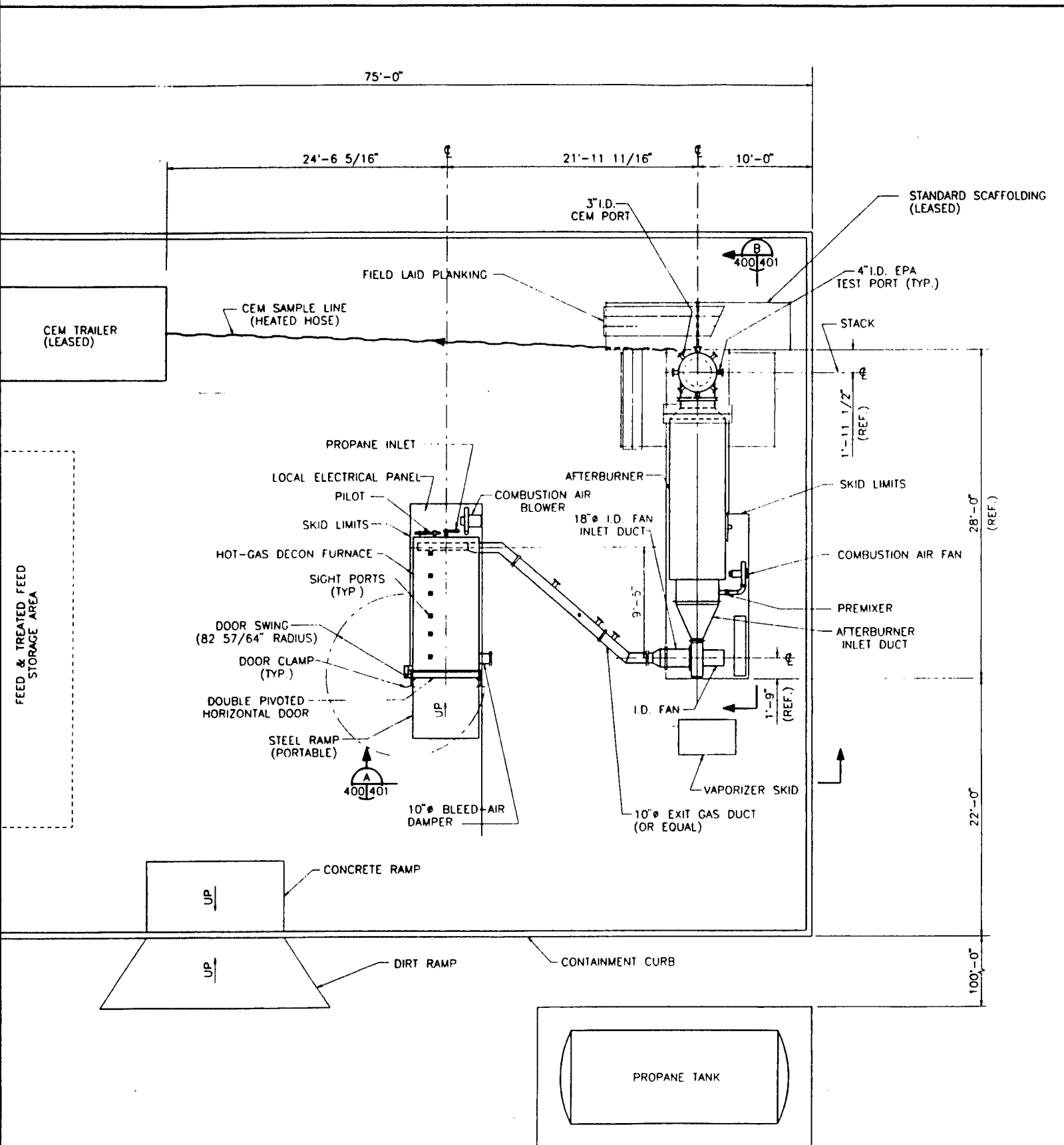
HGD SYSTEM: PIPING & INSTRUMENTATION DIAGRAM

HGD SYSTEM: SITE LAYOUT

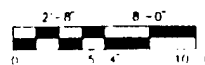
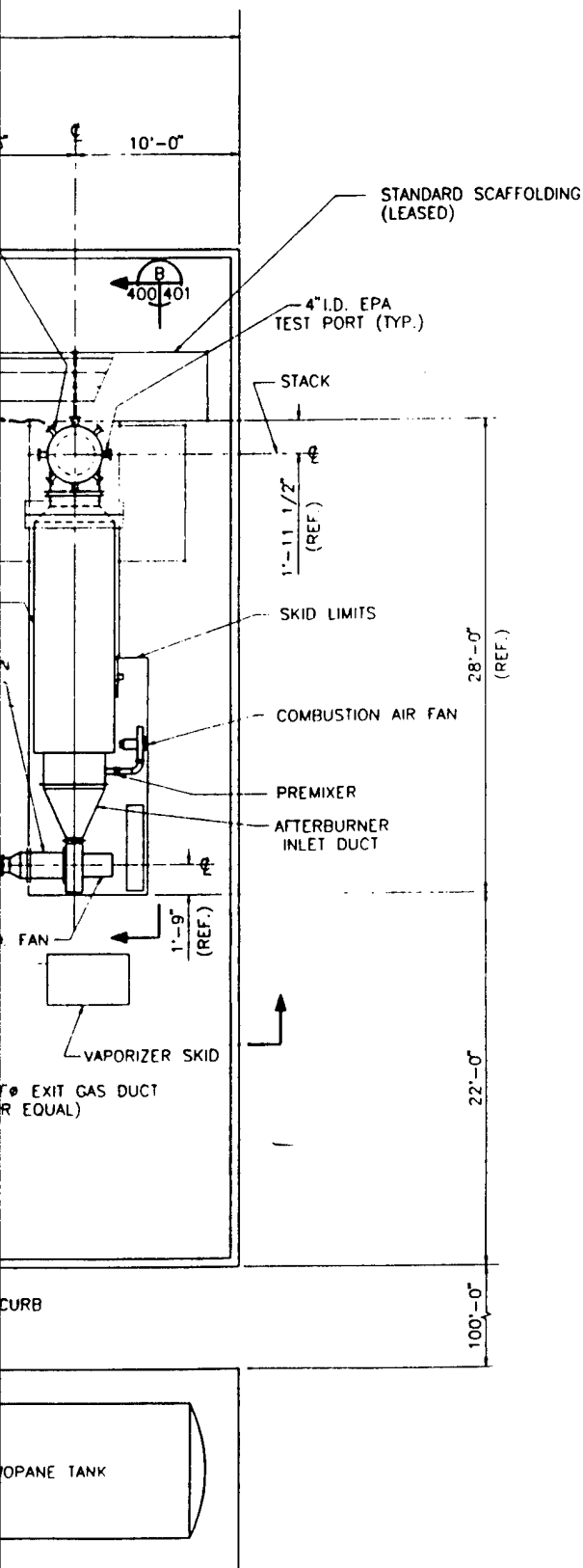
HGD SYSTEM: OVERALL SITE LAYOUT @ ALAAP

HGD SYSTEM: OVERALL SITE LAYOUT: DETAIL A

2



ED FOR CONSTRUCTION	HOT-GAS DECONTAMINATION SYSTEM ALAAP ALPINE, ALABAMA				CHECKED: <i>Ullrich</i>	DATE: 8/13/96	CLIENT APPROVALS:	DATE:
					DES. ENG.			
					PROJ. ENG.			
					PROJ. MGR.			
					APPROVED:			
REVISION	WESTON CHESTER				APPROVED:			

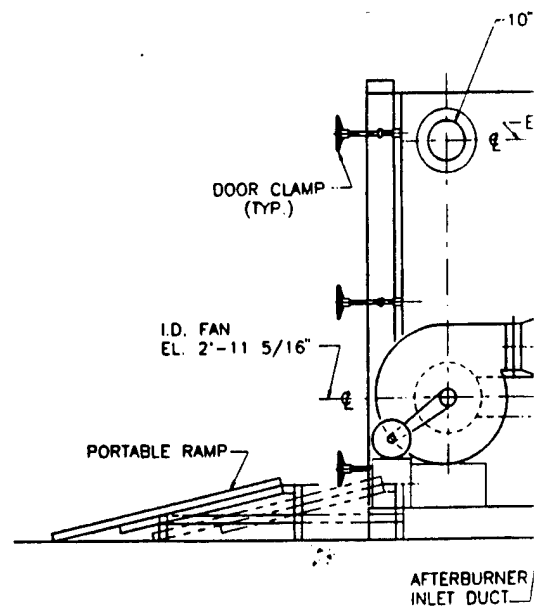
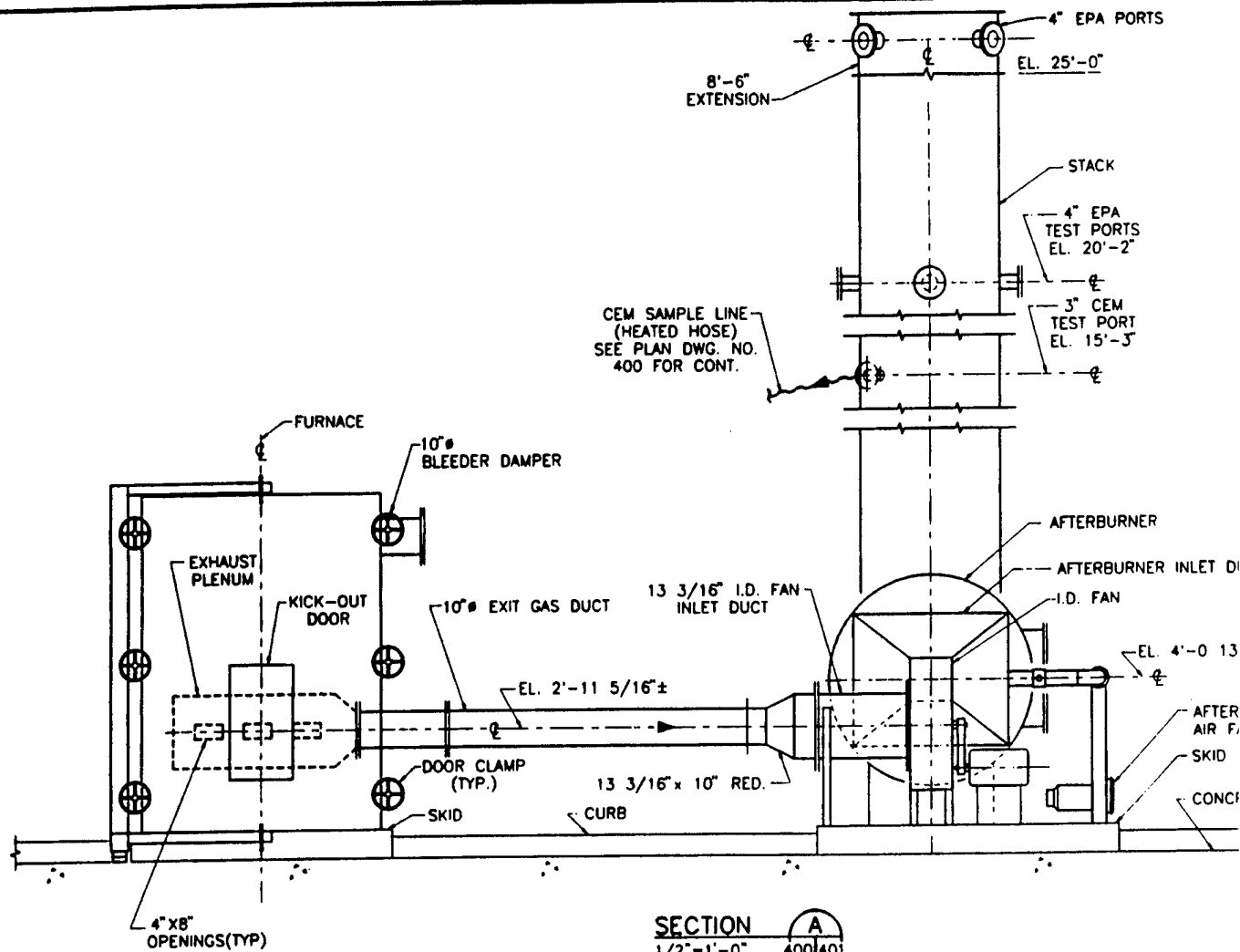


CHECKED	DATE	CLIENT APPROVALS	DATE
<i>Chase</i>	8/3/96		
DES. ENG.			
PROD. ENG.			
PROD. MGR.			
APPROVED			
APPROVED			

HOT GAS DECON SYSTEM GENERAL ARRANGEMENT PLAN

DESIGN	J M	DATE	11/09/94	DOC NO.	400	REV	1
SCALE	3/16" = 1'	W.D. NO.	2281-012-010	SHT		OF	

3

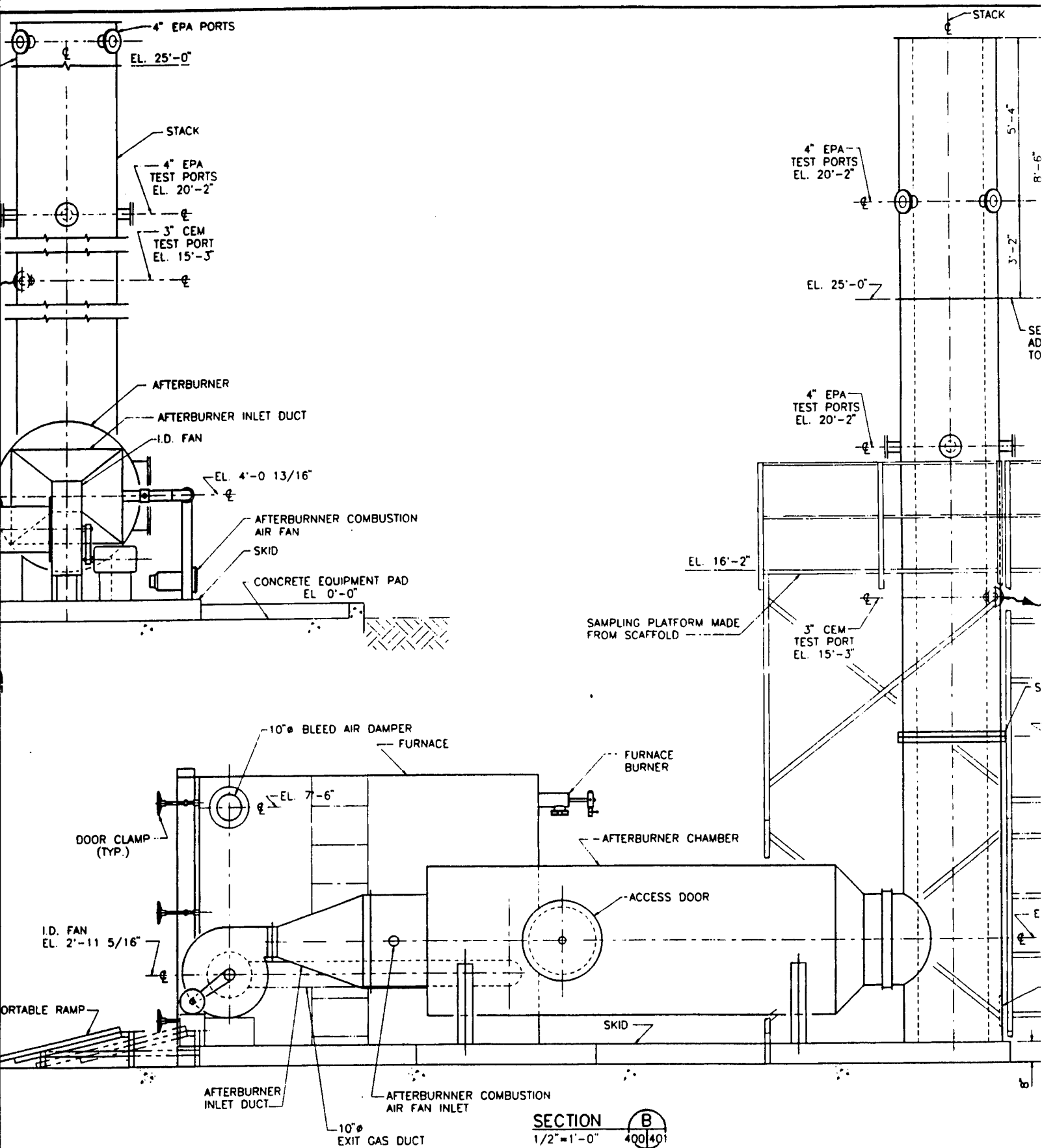


NOTE:
TOP OF CONCRETE EQUIPMENT PAD
IS ASSUMED TO BE EL. 0'-0".

PLOTTED 07/31/98 11:36 am
PLT. SC. 1=24 FILE NO. 12104001

NO	DATE	APPR.	REVISION	NO	DATE	APPR.	REVISION
1	07/31/98	CAP	ISSUED FOR CONSTRUCTION				
2	08/11/98	CAP	REVISED INTERCONNECTING DUCT ARRANGEMENT; ADDED 8'-6" STACK EXT.				

HO
DECONTAMII
ALAAP
WEST CHESTER
WCE



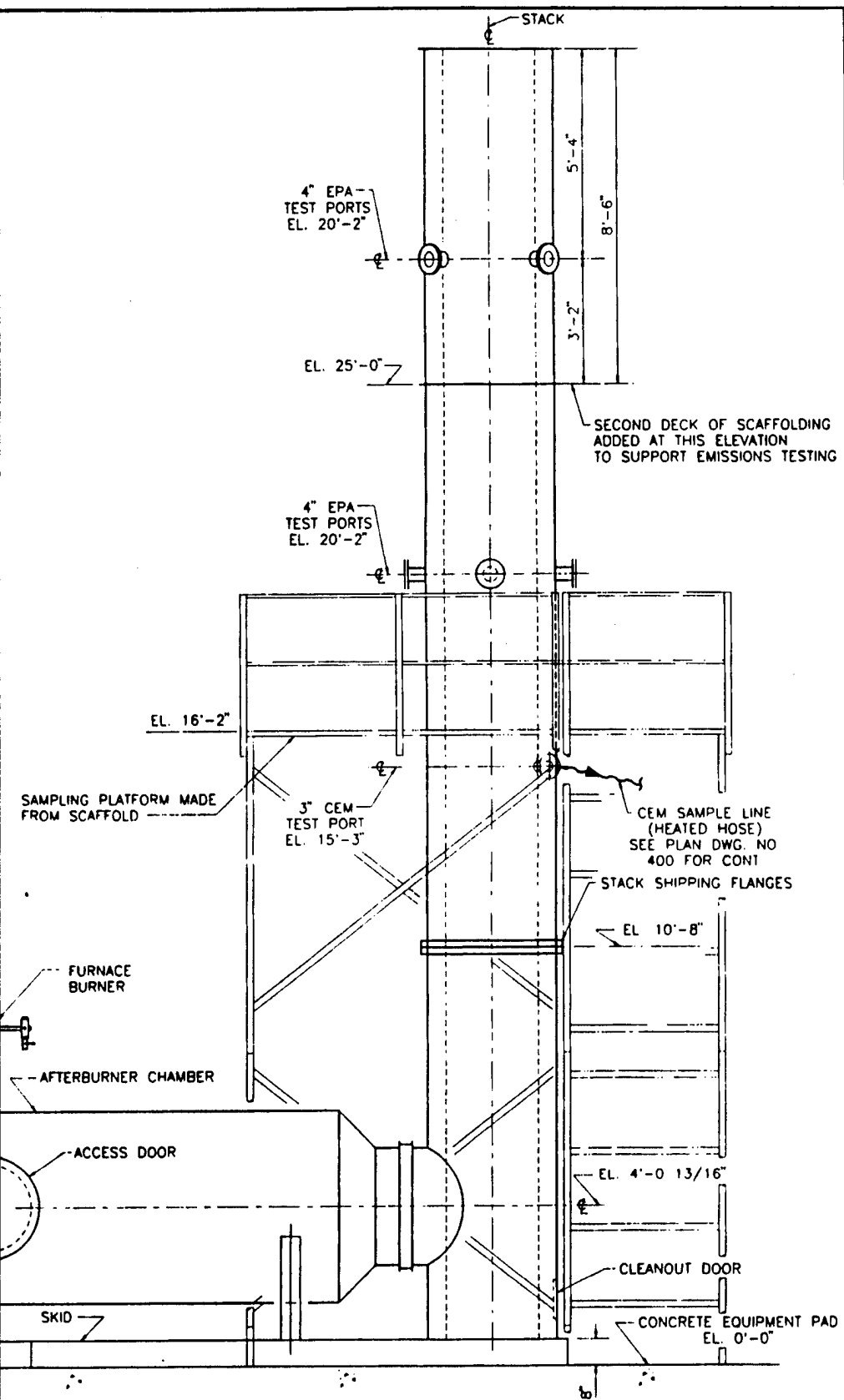
HOT-GAS
DECONTAMINATION SYSTEM
ALAAP ALPINE, ALABAMA

WESTON
DESIGN/ENGINEERING/CONSTRUCTION

CHECKED	DATE	CLIENT APPROVALS	DATE
DES. ENG.			
PROJ. ENG.			
PROJ. MGR.			
APPROVED			
APPROVED			

HOT GAS D
SECTIONS

DATE	J.M.	DATE	11/10
SCALE	1/2" = 1'	NO. NO.	02281-01



SECTION
B
4'-0"

DATE	CLIENT APPROVALS	DATE

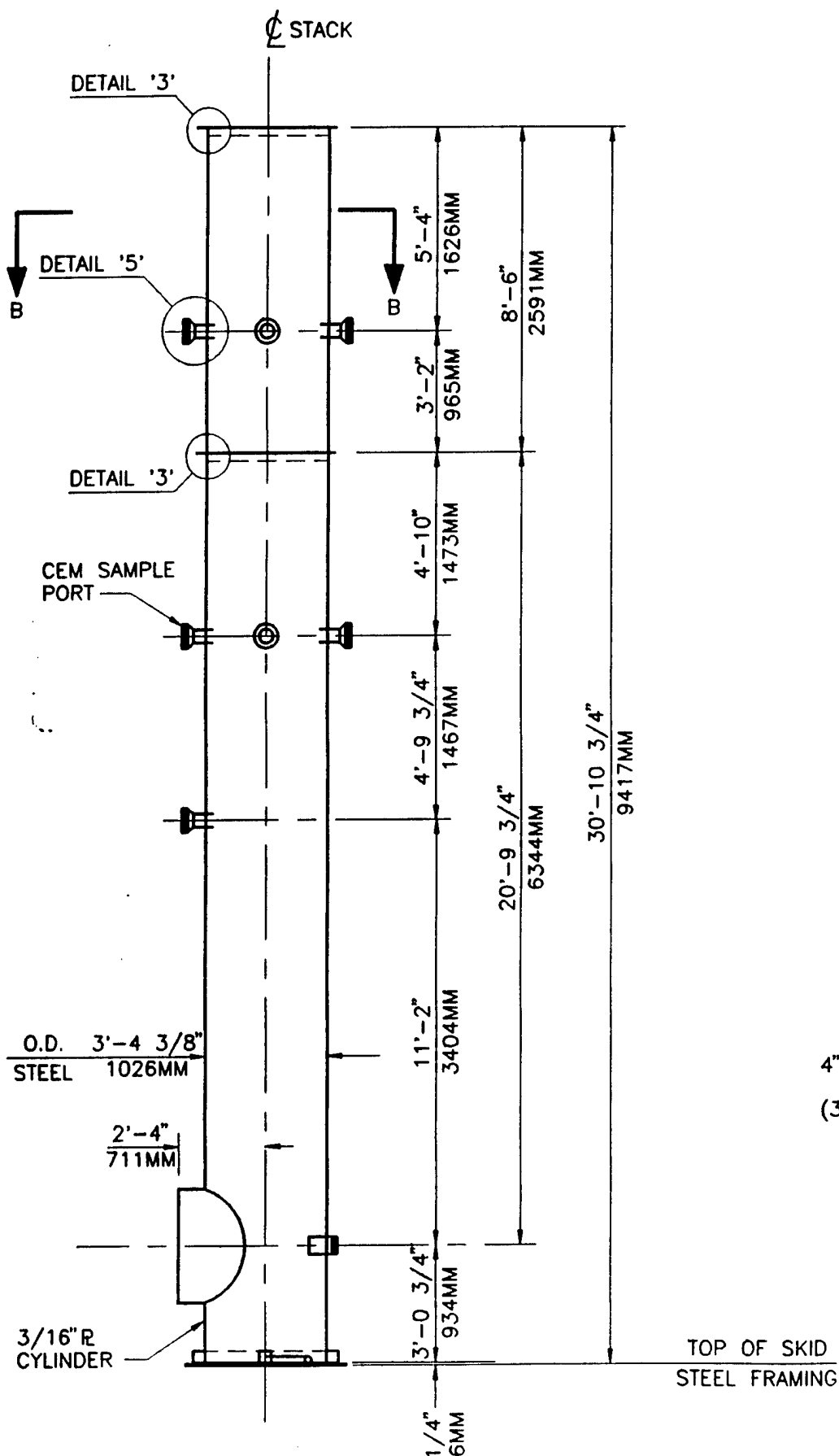
HOT GAS DECON SYSTEM SECTIONS AND DETAILS

DRAWN J.M.	DATE 11/10/94	DWG. NO. 401	REV. NO. 1
SCALE 1/2" = 1'	DWG. NO. 02281-012-010	BY _____ OF _____	

(3)

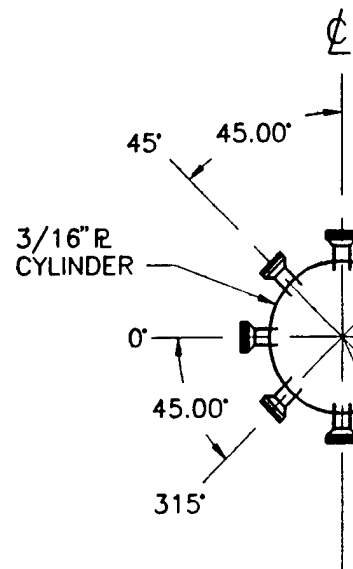
PLOTTED
PLT. SC.

1



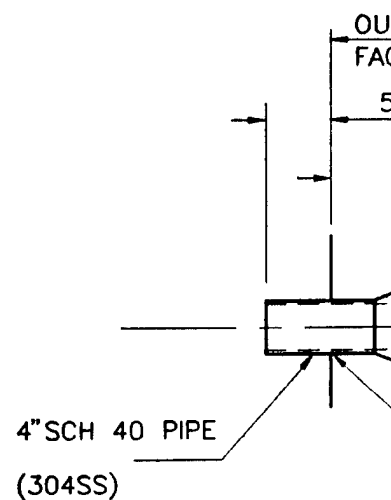
ELEVATION VIEW

SCALE: 1/4" = 1'-0"



SECTION SAMPLE PORTS

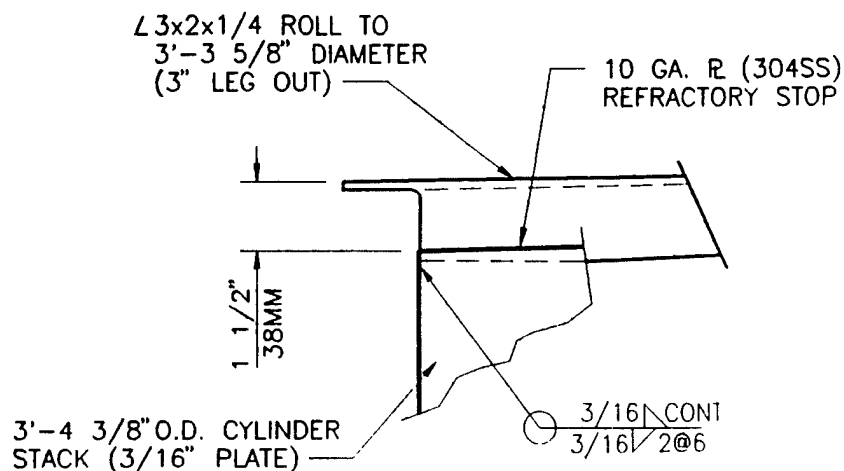
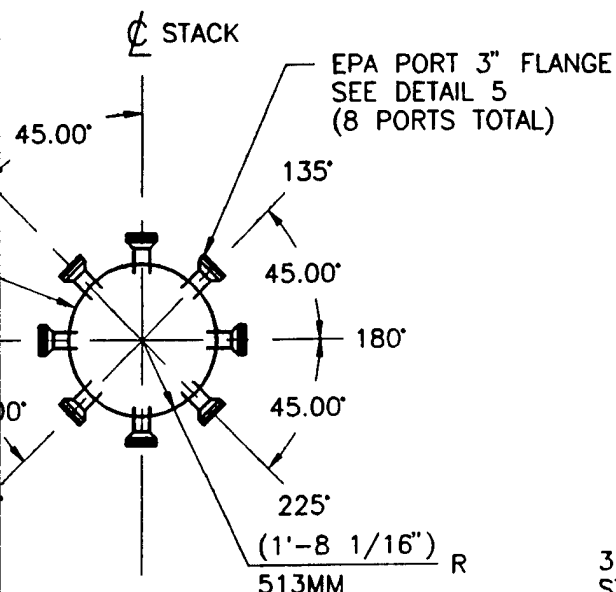
SCALE: 1/4"



(EPA

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DEL

REFERENCE
W.O. NO.: 0228

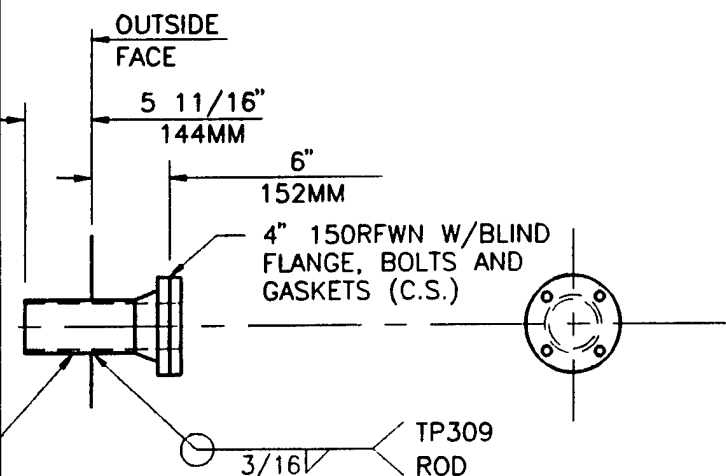


SECTION B-B PORTS PLAN VIEW

SCALE: 1/4" = 1'-0"

DETAIL '3' (STACK CAP RING)

N.T.S.



DETAIL '5' (EPA SAMPLE PORTS) (TYPICAL)

N.T.S.

NOTES:

1. SANDBLAST EXTERIOR SURFACES PER SSPC-SP6.
2. PAINT EXTERIOR SURFACES W/(1) COAT (3-4) MILS DFT CARBOZINC 11, FINISH COAT W/(2) COATS (4 MILS EACH) DFT "SHERMAN WILLIAMS-ALL-WEATHER-EXPOXY".
3. ALL C.S. MATERIAL SHALL BE A36.
4. ALL LIFTING LUGS LIFT STRAIGHT UP UNLESS NOTED OTHERWISE.

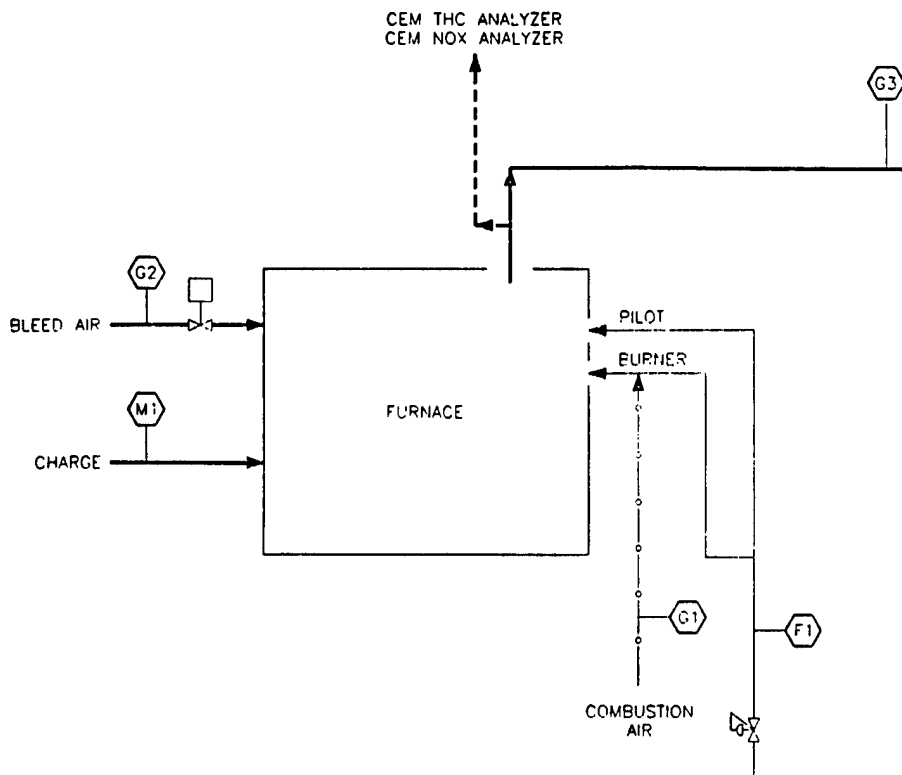
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1=48
08/10/95 3:08 pm

STACK MODIFICATION
TO SUPPORT EMISSIONS TESTING
PROPOSED MODIFICATION #2
DELIVERY ORDER #12

REFERENCE
NO.: 02281-012-012



DRAWN SCB	DATE 8/8/95	DES. ENG.	DATE	W. O. NO. 00936019095
CHECKED	DATE	APPROVED	DATE	DWG. NO. 1000



WARM-UP CONDITIONS		G1	G2	G3	G4	G5
GAS FLOWS		Furnace Combustion Air	Bleed Air Damper	Furnace Exit Gas	Afterburner Combustion Air	Stack Exit Gas
Flow Rate	scfm	333	565	940	248	2,653
Temperature	°F	70	70	700	70	1,800
Pressure	in w.c.	27.00	-0.50	-0.50	13.90	-
Mass Flow: Warm Up	lb/hr	1,536	2,705	4,294	1,137	5,513
Composition:						
CO2	wt %	-	-	3.5	-	7.2
H2O	wt %	-	-	1.9	-	4.0
N2	wt %	79.0	79.0	77.7	79.0	78.8
O2	wt %	21.0	21.0	18.9	21.0	12.0
SOx	wt %	-	-	-	-	-
THC	wt %	-	-	-	-	-
NOx	wt %	-	-	-	-	-

FUEL		F1	F2
		Furnace Fuel	Afterburner Fuel
Flow Rate (maximum)	scfm	423	1037
Pressure	psi	5	5
Mass Flow (maximum)	lb/hr	50.54	123.98
Burner Heat Release	btu/hr	1,128,868	1,830,850
Composition:			
C	wt %	81.6	81.6
H	wt %	18.4	18.4

MATERIAL		M1
		Furnace Charge
Charge Size (maximum)	lbs	3,000
Moisture Content	%	-
Temperature	°F	70

STEADY-STATE CONDITIONS		G1	G2	G3	G4	G5
GAS FLOWS		Furnace Combustion Air	Bleed Air Damper	Furnace Exit Gas	Afterburner Combustion Air	Stack Exit Gas
Flow Rate	scfm	80	0	342	248.10	1,311
Temperature	°F	70	-	700	700	1,800
Pressure	in w.c.	27.00	-	-0.50	13.90	-
Mass Flow	lb/hr	371	-	1,582	1,137	2,729
Composition:						
CO2	wt %	-	-	4.5	-	5.8
H2O	wt %	-	-	2.5	-	3.2
N2	wt %	79.0	-	77.3	79.0	77.2
O2	wt %	21.0	-	15.7	21.0	13.8
SOx	wt %	-	-	-	-	-
THC	wt %	-	-	-	-	-
NOx	wt %	-	-	-	-	-

FUEL		F1	F2
		Furnace Fuel	Afterburner Fuel
Flow Rate (maximum)	scfm	197	248
Pressure	psi	5	5
Mass Flow (maximum)	lb/hr	24	29.63
Burner Heat Release	btu/hr	487,184	587,498
Composition:			
C	wt %	81.6	81.6
H	wt %	18.4	18.4

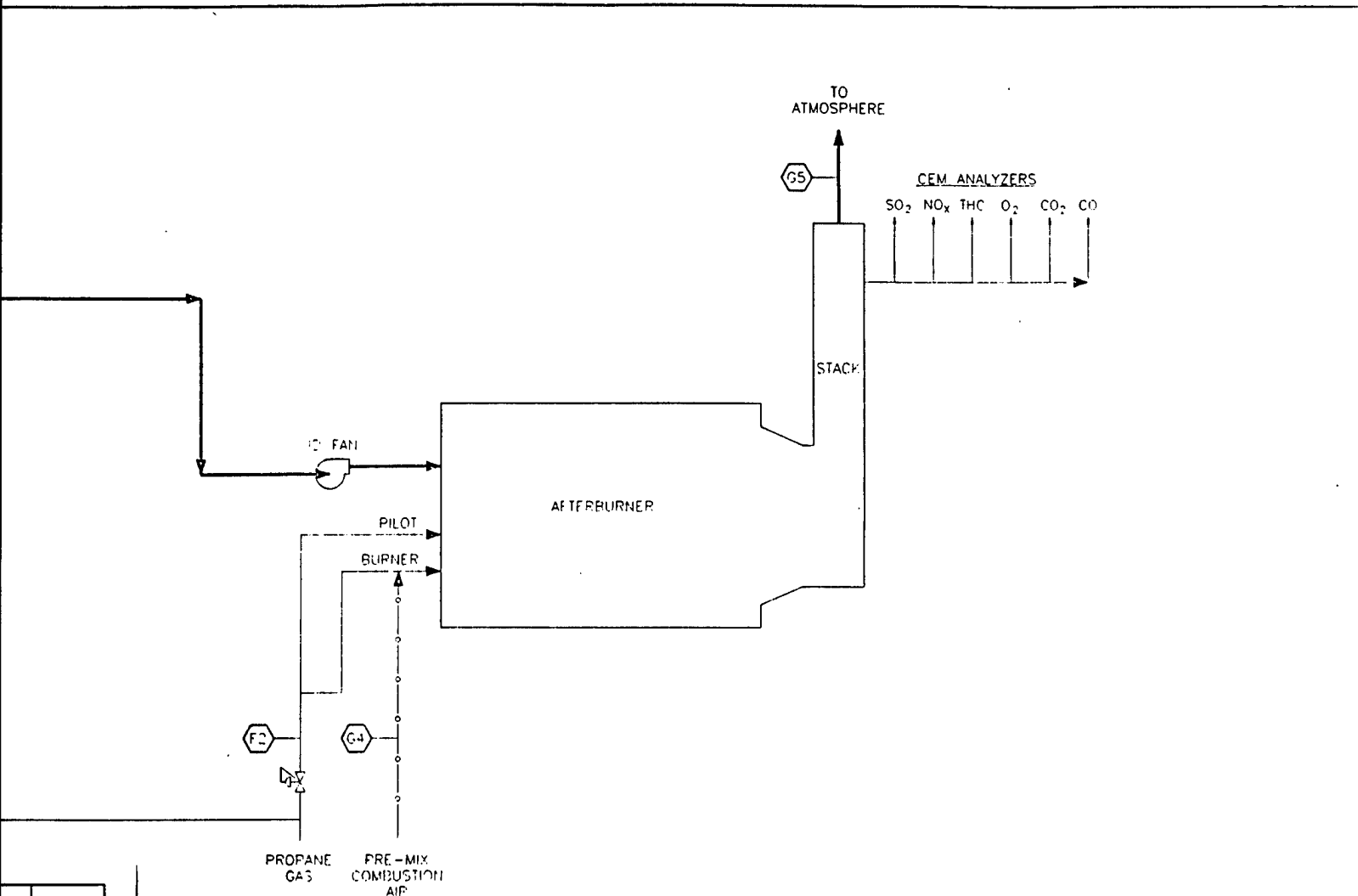
MATERIAL		M1
		Furnace Charge
Charge Size (maximum)	lbs	3,000
Moisture Content	%	-
Temperature	°F	700

PRINTED 05/19/95 5:05 am
FILE NO. 12101001

1. ADDITIONAL INFORMATION		2. ADDITIONAL INFORMATION	
1. ADDITIONAL INFORMATION		2. ADDITIONAL INFORMATION	
1. ADDITIONAL INFORMATION		2. ADDITIONAL INFORMATION	
1. ADDITIONAL INFORMATION		2. ADDITIONAL INFORMATION	
1. ADDITIONAL INFORMATION		2. ADDITIONAL INFORMATION	

U.S.
DELIVERY OR

WE



M1	
Units	Furnace Charge
lb	3,000
h	70

M1	
Units	Furnace Charge
lb	3,000
h	70

COOL-DOWN CONDITIONS		G1	G2	G3	G4	G5
GAS FLOWS		Furnace Combustion Air	Bleed Air Damper	Furnace Exit Gas	Afterburner Combustion Air	Stack Exit Gas
Flow Rate	scfm	333	565	918	246	1,108
Temperature	°F	70	70	—	70	1,800
Pressure	in w.c.	27.00	-0.50	-0.50	13.90	—
Mass Flow	lb/hr	1,538	2,705	4,243	1,137	2,324
Composition:						
CO2	wt %	—	—	—	—	14.7
H2O	wt %	—	—	—	—	8.1
N2	wt %	79.0	79.0	79.0	79.0	59.4
O2	wt %	21.0	21.0	21.0	21.0	17.8
SOx	wt %	—	—	—	—	—
THC	wt %	—	—	—	—	—
NOx	wt %	—	—	—	—	—

FUEL		F1	F2
		Furnace Fuel	Afterburner Fuel
Flow Rate (maximum)	scfm	—	955
Pressure	psi	—	5
Mass Flow (maximum)	lb/hr	—	114
Burner Heat Release	btu/hr	—	2,258,900
Composition:			
C	wt %	—	81.6
H	wt %	—	18.4

MATERIAL		M1
Charge Size (maximum)	lb	3,000
Moisture Content	%	—
Temperature	°F	700

U.S.A.E.C.
LIVERY ORDER #10 & 12

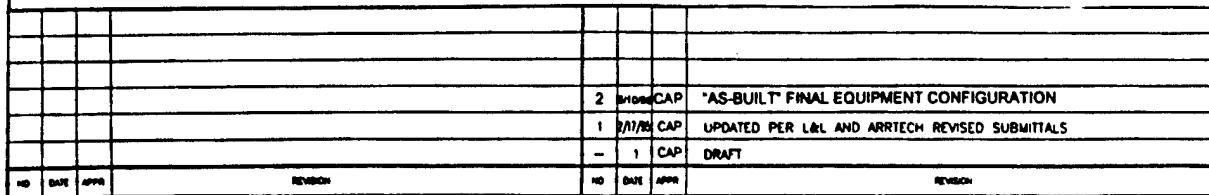


REVISION	DATE	REVISION	DATE

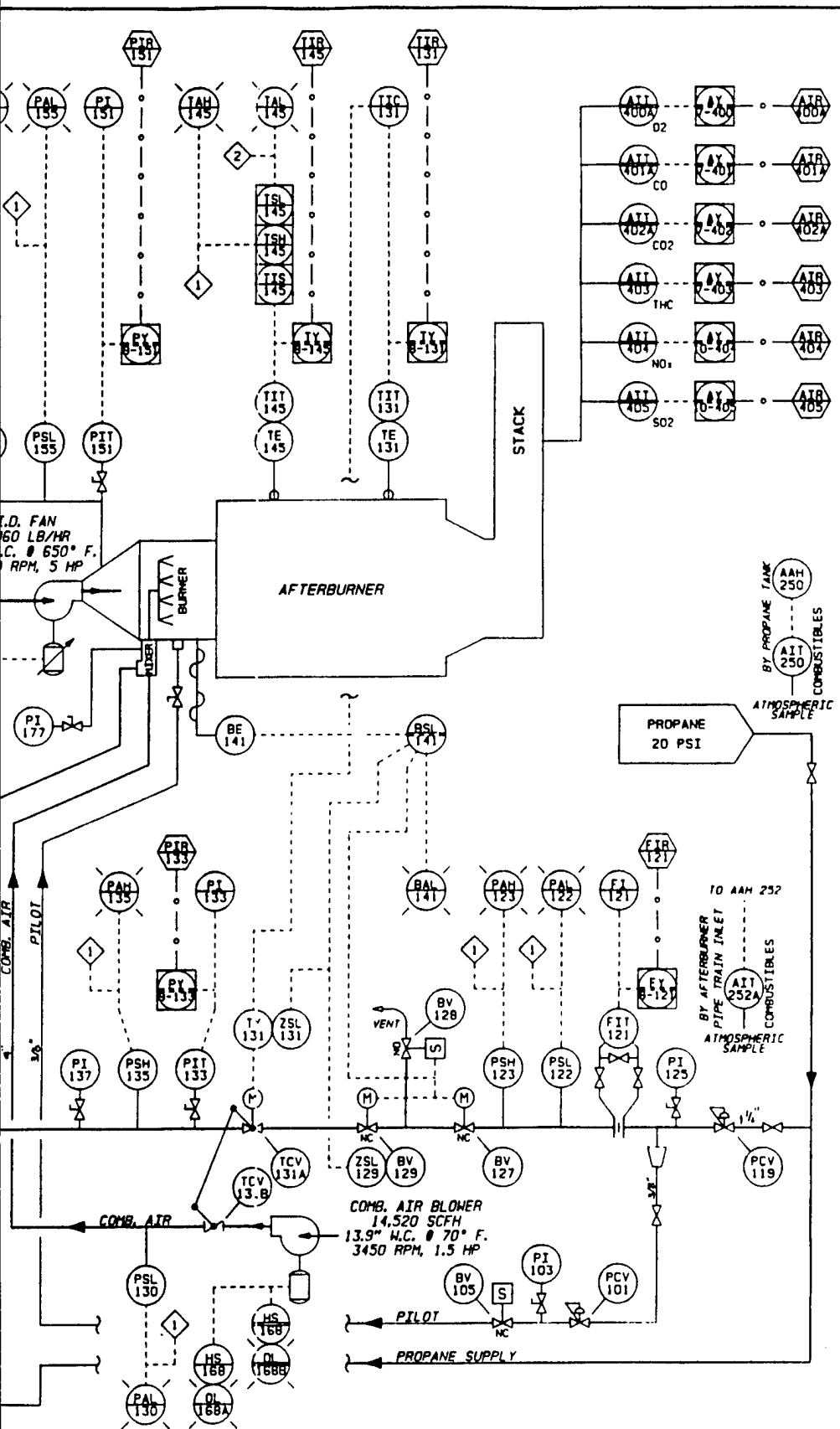
2

PROCESS FLOW DIAGRAM
HOT-GAS DECONTAMINATION SYSTEM

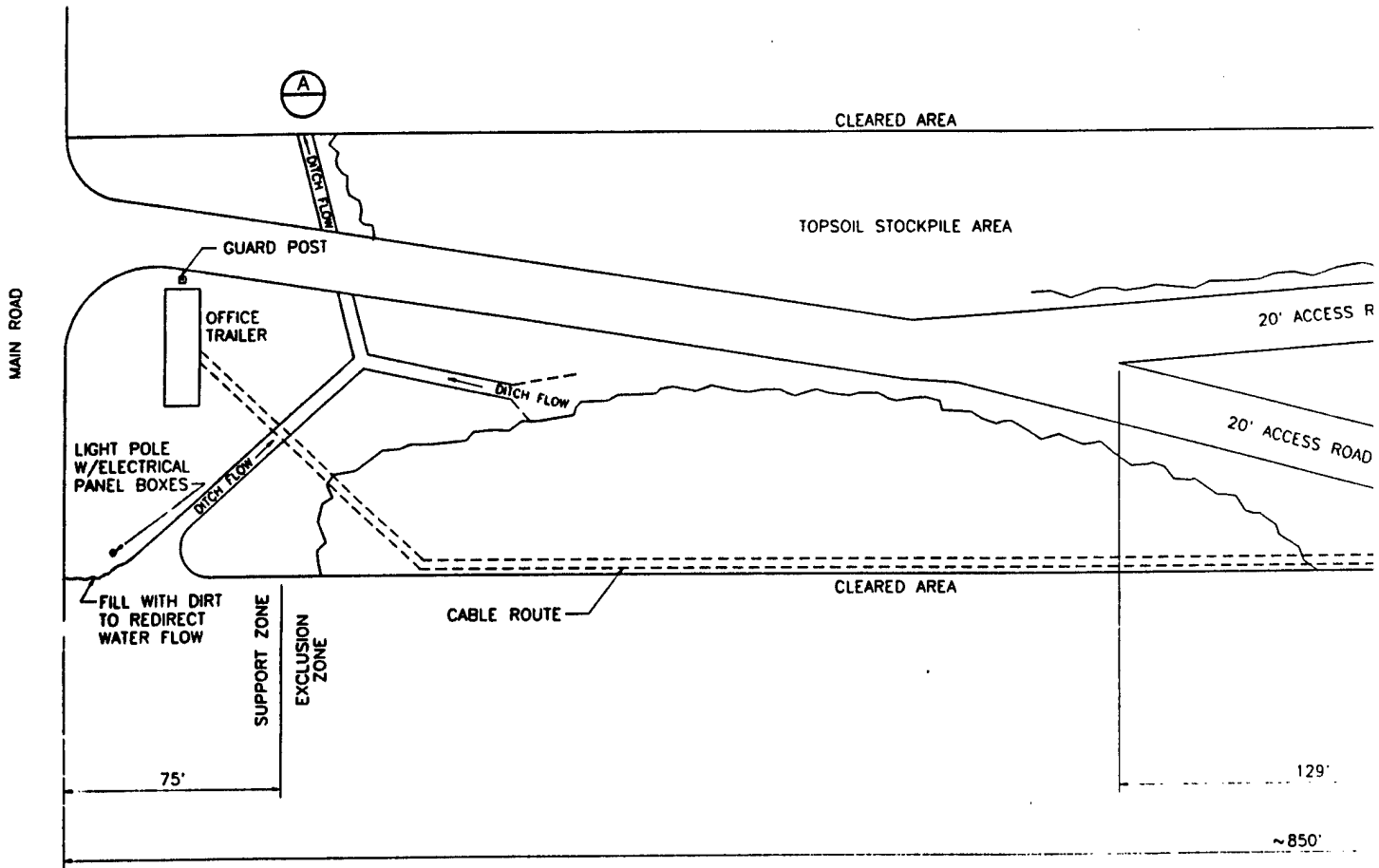
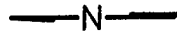
M. PALMISTO	2.00.00	1001	2
DATE	2019-01-10		



WEST GASTON 1



3

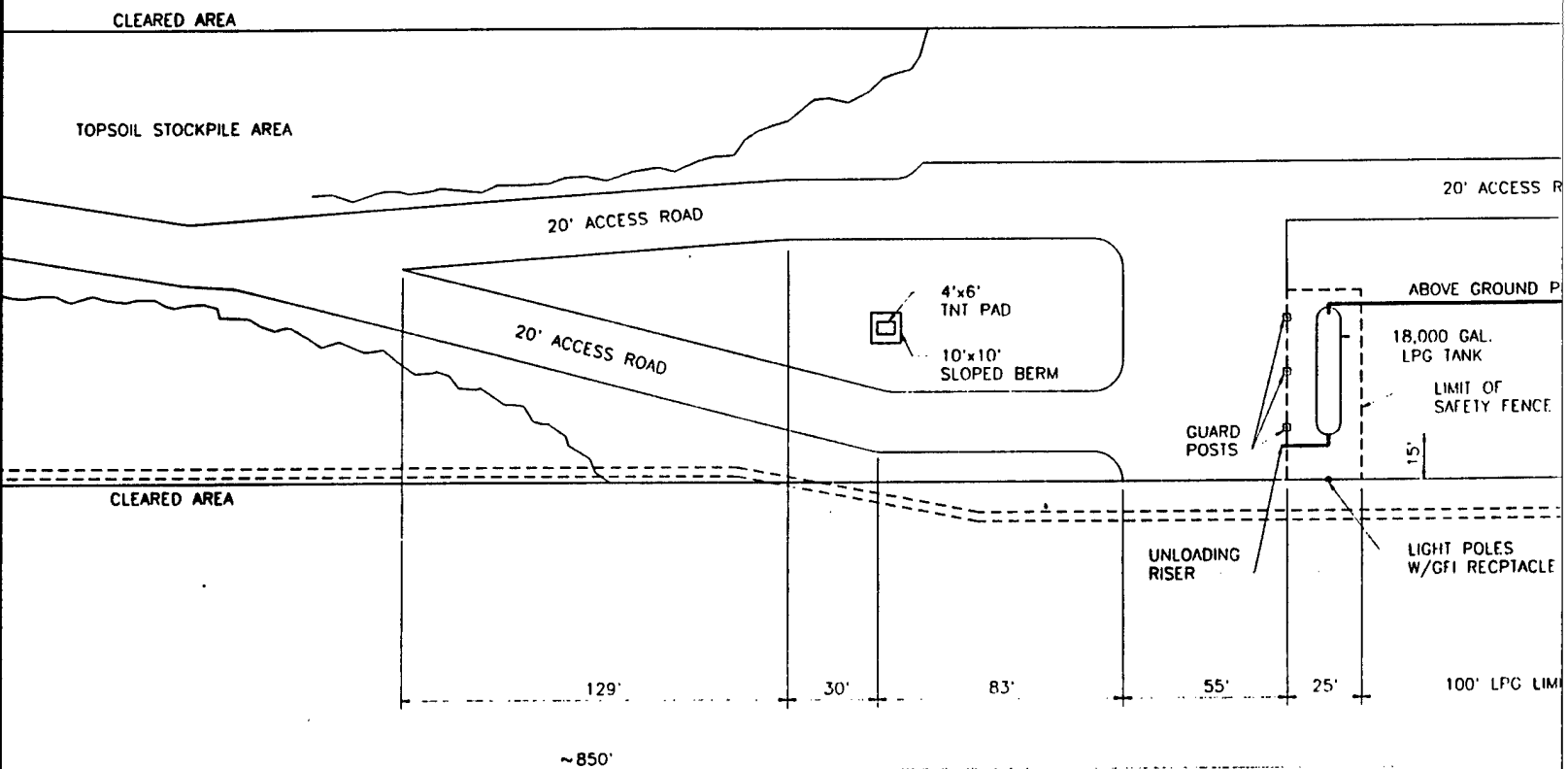


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PLT SC 1=350 FILE NO 12122000

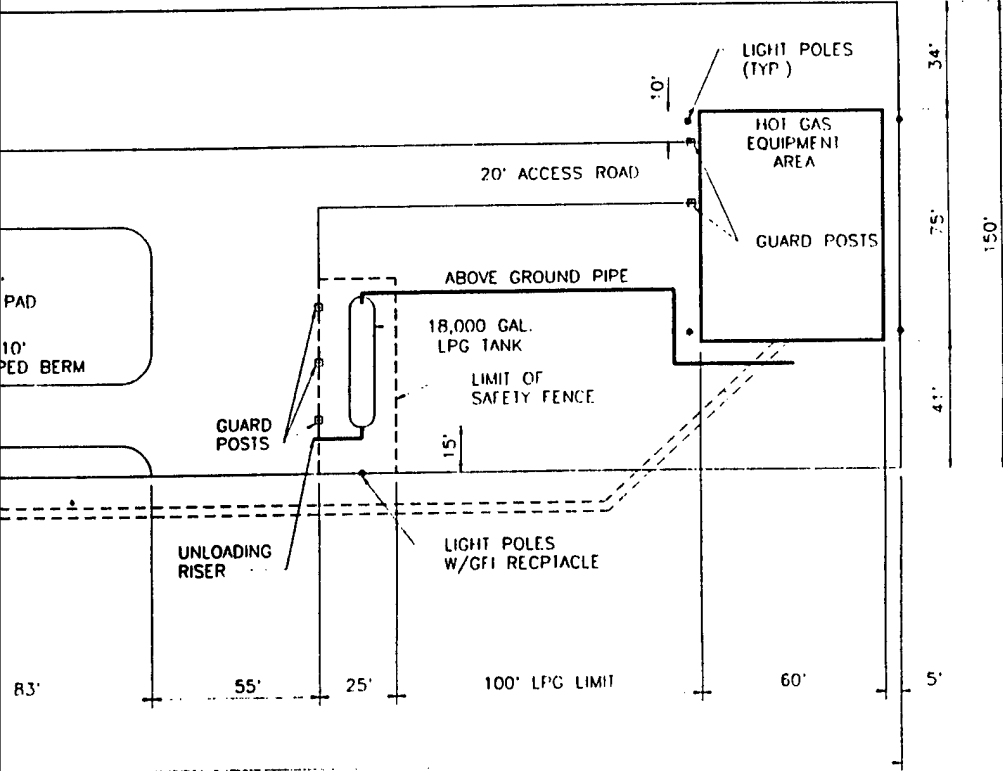
NO	DATE	APPR	REVISION	NO	DATE	APPR	REVISION
3	11/11/95	WJ	SHOWN WITH MODIFICATIONS FOR TESTING				
2	11/11/95		SHOWN WITH TRAILERS AND AS CONSTRUCTED				
1			INITIAL SITE LAYOUT				

US
DELIVERY ORD

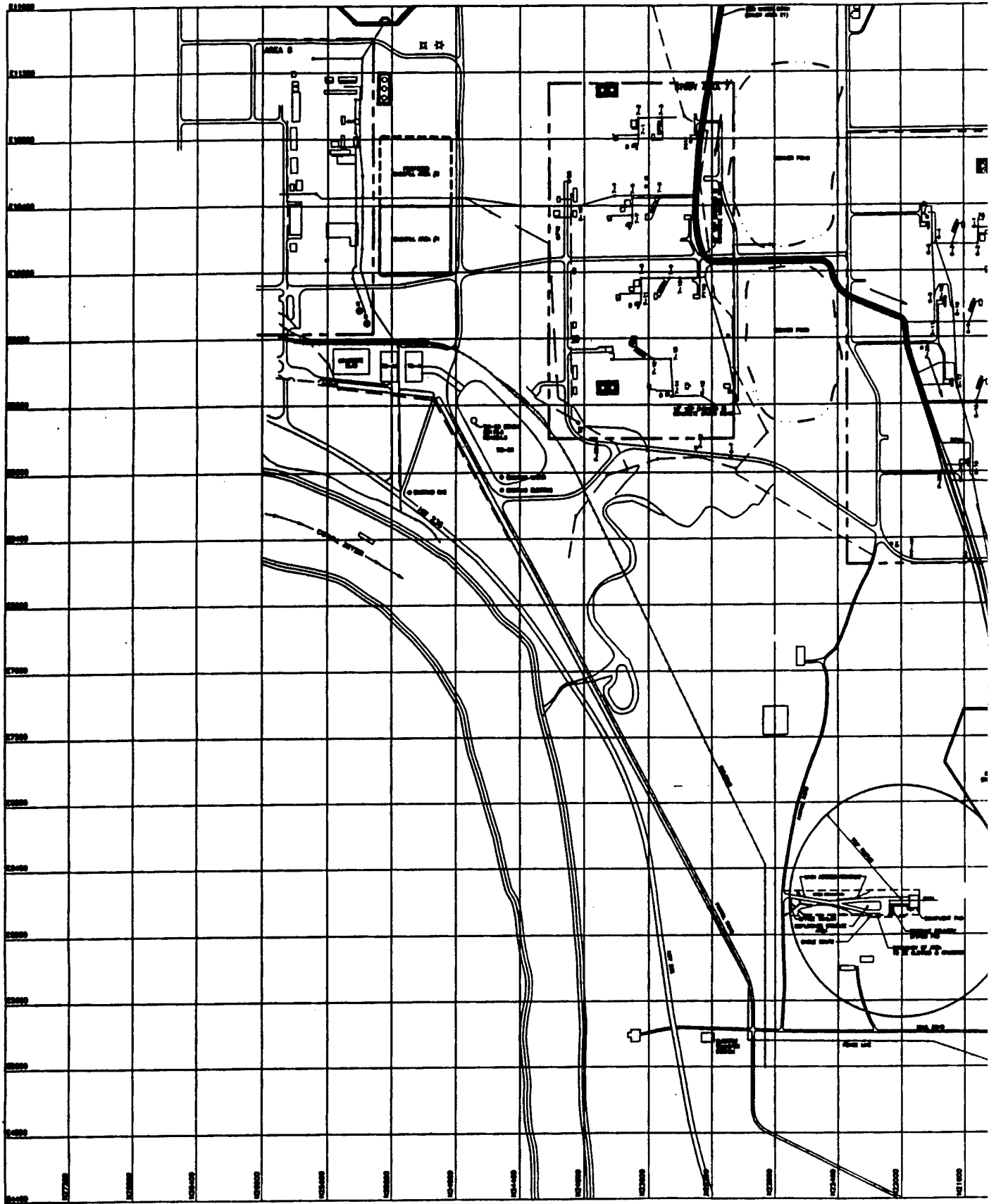
WEC
WEST CHESTER



<div style="border: 2px solid black; border-radius: 50%; width: 60px; height: 60px; display: flex; align-items: center; justify-content: center; margin: 0 auto;">2</div>	USACE DELIVERY ORDER #10& #12		CHECKED: <i>CA Parker</i> DES. ENG.	DATE: <i>11/11/96</i>	CLIENT APPROVALS	DATE
			PROJ. ENG.			
			PROJ. MGR.			
			APPROVED			
			APPROVED			
WESTON <small>ARCHITECTS ENGINEERS CONSULTANTS</small>		<small>WEST CHESTER</small>		<small>PE HAVES/MAHAR</small>		



DATE	CLIENT APPROVALS	DATE	SITE LAYOUT	
11/11/96			DATE	6/21/95
			SCALE	1" = 30'
			NO.	02281-012-012
			REV.	C100
				3



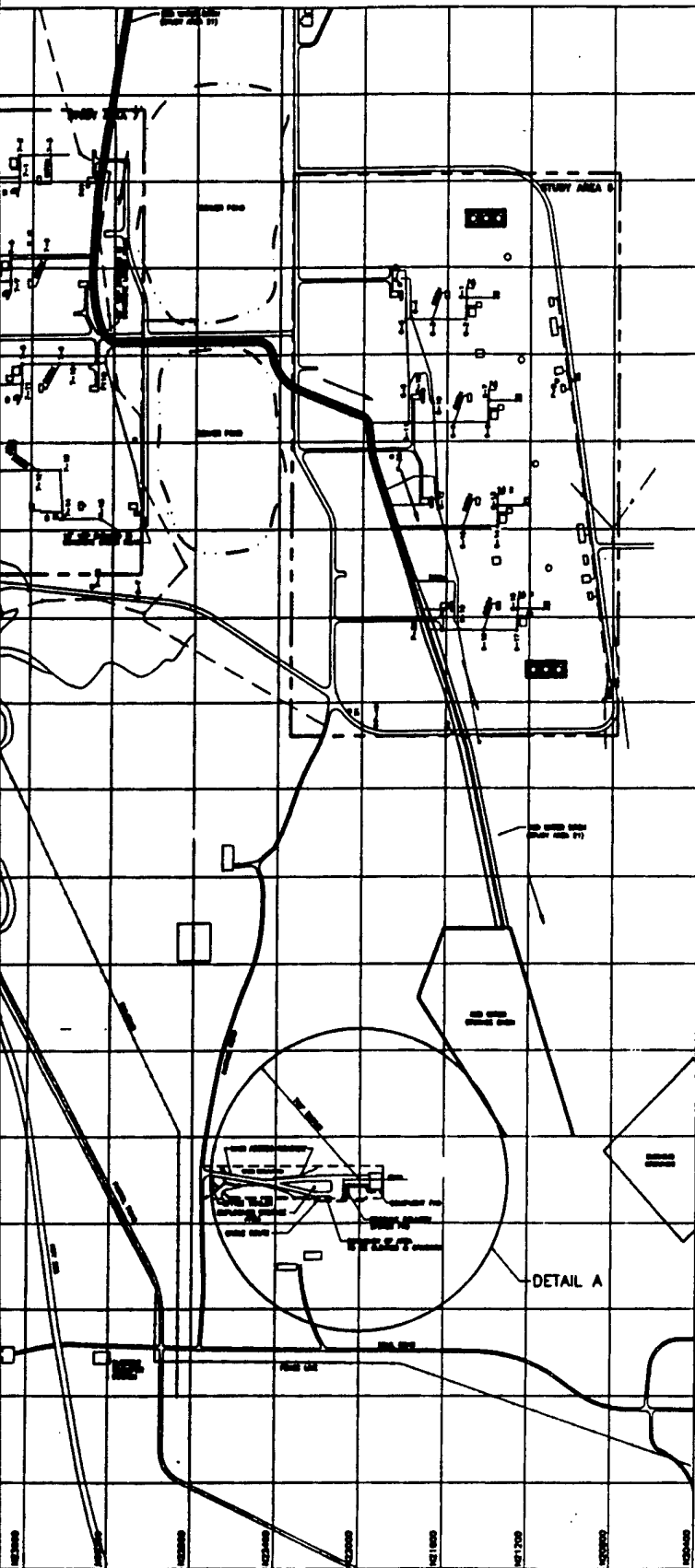
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 PLY. SC. 1-4800 FILE NO. PARKER

NO.	DATE	APPROVAL	REVISION
3	8/7/96	CAP	SHOWN WITH MODIFICATIONS FOR TESTING
2	8/1/96	CAP	ADDED EXPLOSIVES- STORAGE AREA & ADDITIONAL SITE ID'S
1	8/1/96	CSP	MOVED SITE TO ACCOMMODATE OTHER SITE REMEDIATION ACTIVITIES

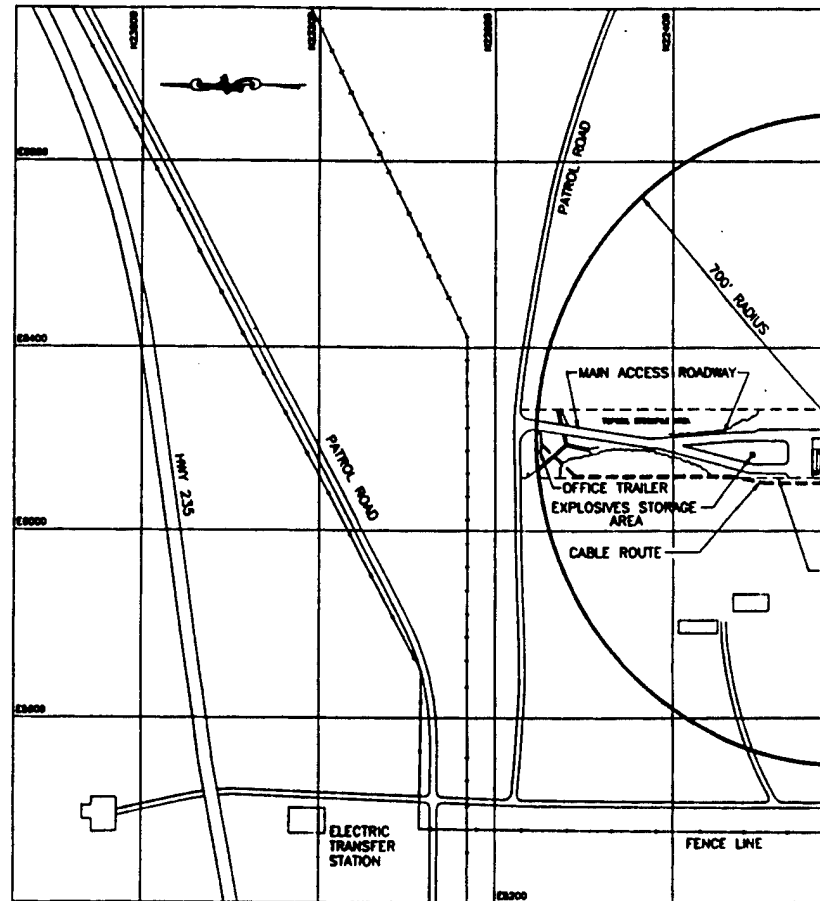
DECONTA
 ALPINE

V.

WEST CHESTER



NOTE:
DRAWINGS ARE APPROXIMATELY SCALED BASED UPON
PREVIOUS INVESTIGATIVE REPORTS PREPARED BY
AND A SITE PLAN PREPARED FOR ALABAMA ORDER
WORKS (SANITARY & INDUSTRIAL WASTE SEWERAGE
NO. 2, 1946). SITE FEATURES AND OTHER INFORMATION
PROVIDED IN THIS DRAWING WILL BE VERIFIED DURING
SITE SURVEY AND SUBSEQUENT REMEDIAL ACTIVITIES.



DETAIL A

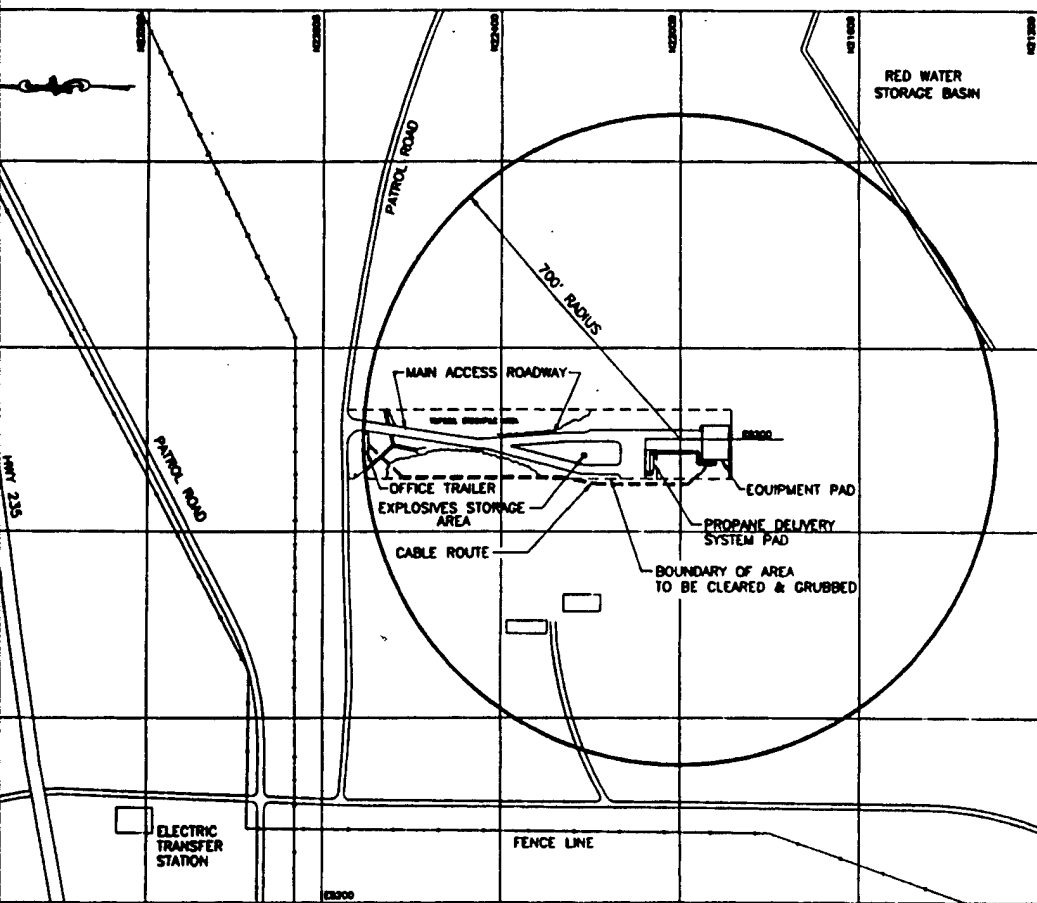
- LEGEND**
- +—+—+ RAILROAD TRACKS
 - P41 (M) MONITORING WELL
 - 7—3 MANHOLE
 - EXISTING ROAD
 - FLOW DIRECTION
 - 700' SAFETY ZONE



<h2 style="margin: 0;">HOT-GAS DECONTAMINATION SYSTEM</h2> <p style="margin: 0;">ALPINE ALABAMA</p> <h1 style="margin: 0; font-family: sans-serif;">WESTON</h1> <p style="margin: 0; font-size: small;">DESIGN, ENGINEERING, CONSTRUCTION</p>		CHECKED	DATE	CLIENT APPROVALS	DATE	<div style="font-size: 2em; font-weight: bold;">HO</div> <div style="font-size: 2em; font-weight: bold;">O</div>
		DES. ENG.				
<p style="margin: 0;">FOR TESTING</p> <p style="margin: 0;">STUDY AREA & ADDITIONAL SITE ID'S</p> <p style="margin: 0;">SITE OTHER SITE REMEDIATION ACTIVITIES</p>		PROJ. ENG.				<div style="border: 1px solid black; border-radius: 50%; width: 40px; height: 40px; margin: 0 auto;"></div>
		PROJ. MGR.				
<p style="margin: 0;">REVISION</p>		APPROVED				<p style="margin: 0;">SCALE</p> <p style="margin: 0; font-weight: bold;">1" = 400'</p>
		APPROVED				

NOTE:

DRAWINGS ARE APPROXIMATELY SCALED BASED UPON PREVIOUS INVESTIGATIVE REPORTS PREPARED BY ESE INC., AND A SITE PLAN PREPARED FOR ALABAMA ORDINANCE WORKS (SANITARY & INDUSTRIAL WASTE SEWERAGE PLANT NO. 2, 1946). SITE FEATURES AND OTHER INFORMATION PROVIDED IN THIS DRAWING WILL BE VERIFIED DURING THE SITE SURVEY AND SUBSEQUENT REMEDIAL ACTIVITIES.

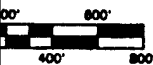


DETAIL A



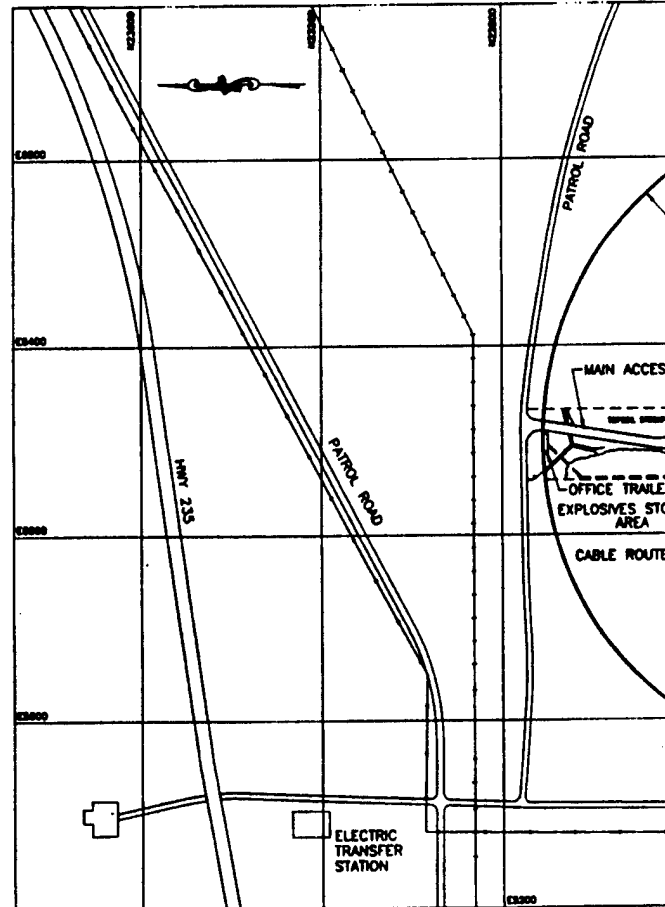
LEGEND

- RAILROAD TRACKS
- MONITORING WELL
- MANHOLE
- EXISTING ROAD
- FLOW DIRECTION
- 700' SAFETY ZONE



DATE	CLIENT APPROVALS	DATE	HOT GAS DECON SYSTEM OVERALL SITE LAYOUT				
			SPRINT	R.L.	DATE	DWG NO	REV NO
					11/9/94	2000	3
			SCALE	1" = 400'		DWG NO.	
				02281-012-010		SHT	

(3)



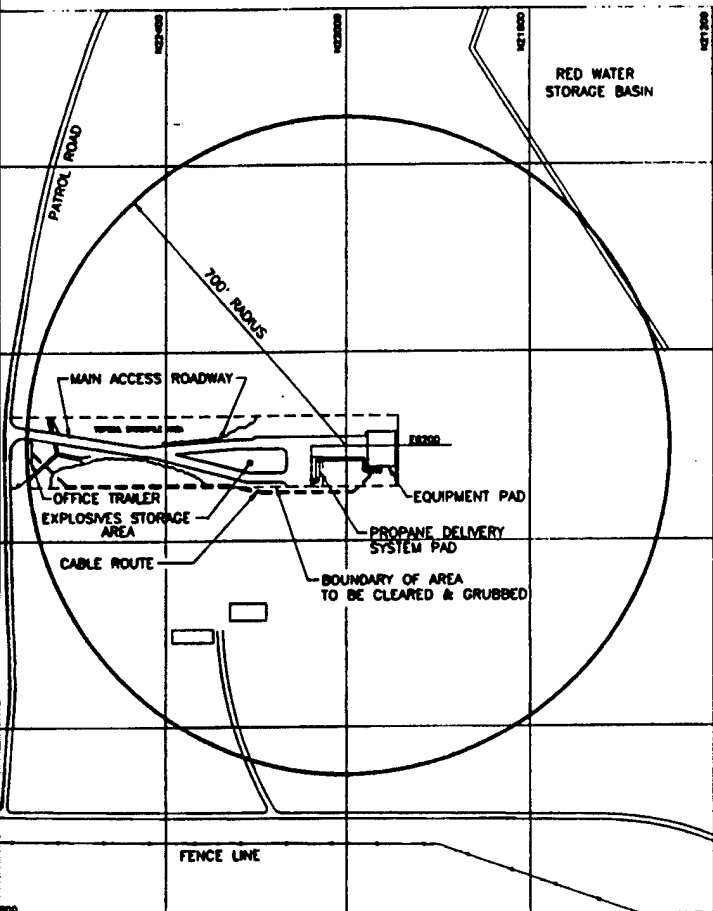
①

PLOTTED 06/07/96 10:22 am
 PLOT. SC. 1-2400 FILE NO. 12102001

REV	DATE	BY	APP	REVISION
2	8/7/96	CAP		SHOWN WITH MODIFICATIONS FOR TESTING
1	1/1/96	CAP		ADDED EXPLOSIVES- STORAGE AREA & ADDITIONAL SITE ID'S
-	1/1/96	CAP		ISSUED FOR CONSTRUCTION

HOT —
 DECONTAMINATION
 ALPINE

 WEST CHESTER



2



HOT - GAS
CONTAMINATION SYSTEM
ALABAMA

WESTON
ENGINEERING, CONSULTING, INC.

PROJECT NO. 02281-012-010

CHECKED	DATE	CLIENT APPROVALS	DATE
DES. DES.			
PROJ. DES.			
PROJ. MGR.			
APPROVED			
APPROVED			

FIGURE 1
SYSTEM SITE LAYOUT

DESIGN	B. DAILY	DATE	11/11/94	DWG. NO.	2001	REV. NO.	2
SCALE	1" = 200'	W.D. NO.	02281-012-010	DAT.			